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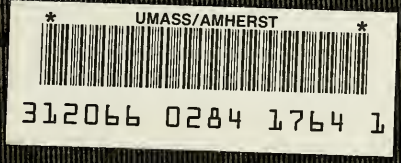

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THE

ANNUAL STATISTICS

OF

MANUFACTURES.

1901.

SIXTEENTH REPORT.

BOSTON:
WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 Post Office Square.
1902.

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1901.

Commonwealth of Massachusetts.

Bureau of Statistics of Labor,
Rooms 250–258, State House,
Boston, July 15, 1902.

To the Honorable Senate and House of Representatives:

I have the honor to transmit, herewith, the Annual Statistics of Manufactures for the year 1901, which have been collected and are presented in compliance with Chapter 107 of the Revised Laws.

I wish to acknowledge in this connection the faithful services of Mr. Frank H. Drown, Second Clerk of the Bureau, in charge of the Division of Manufactures, and to recognize also the continued assistance, in the general work of the Department, of Mr. Charles F. Pidgin, First Clerk.

Very respectfully,

HORACE G. WADLIN,
Chief.

23071

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PART I.

INDUSTRIAL CHRONOLOGY

FOR THE

NINE MONTHS ENDING SEPTEMBER 30, 1901.

PART I.

INDUSTRIAL CHRONOLOGY—1901.

Abington. In February, A. C. Woodward, elastic goring, added strapping for shoes to product.

Acton. In February, Hall Bros., pails and tubs, shut down for repairs.

Adams. In January, Greylock Shirt Co. shut down for 10 days. *February.* L. L. Brown Paper Co. began erection of boiler house.—Graham, Clark, & Co. installed new boiler and added new machinery.—W. C. Plunkett & Sons added new machinery. *March.* Berkshire Cotton Manufacturing Co. shut down on account of high water. *April.* L. L. Brown Paper Co. shut down two weeks to install new engine and make repairs.—Greylock Shirt Co. shut down stitching department indefinitely.—Berkshire Cotton Manufacturing Co. shut down temporarily owing to accident to machinery. *May.* Briggs & Harrington sold their wagon plant to Louis Ruel and retired from business.—Fire damaged boiler house of H. J. Arnold & Sons' sawmill. *June.* L. L. Brown Paper Co. began on foundation for new mill. *July.* Adams Marble Co. started on season's work. *August.* Most of the manufacturing establishments damaged by flood.—Levi L. Brown, paper manufacturer, died, aged 75 years; in 1848, he organized L. L. Brown Paper Co.; was the founder of Renfrew Manufacturing Co. and Windsor Manufacturing Co., North Adams, and originator of the Whiting Paper Co., Holyoke, and of the American and United Zylonite Co.

Agawam. In February, Agawam Co. shut down on account of accident to main shaft.

Amesbury. In January, work begun at factory of Briggs Carriage Co., after shutdown of several months.—Fire damaged carriage factory of Curran, Burke, & Co. *February.* C. Warren Brown, of Lockwood & Brown, wheels, died, aged 59 years.—Hume Carriage Co. erected 3-story addition to factory. *June.* David J. Folger, retired carriage manufacturer, died, aged 61 years; he began business in 1869. *July.* Cameron & Hines Co. began the manufacture of carriages.

Andover. In July, Tyer Rubber Co. shut down for stock taking; the usual summer shutdown ended July 15.

Ashburnham. In March, the Ashburnham Sheeting Mill commenced work after shutdown of several months.

Ashland. In July, shoe factory of Josiah A. Balcom started up after shutdown of several months. *August.* Ashland Boot & Shoe Co. closed business; factory taken by Woodland Manufacturing Co.—F. E. Tuttle, of Olmsted & Tuttle, started up carpet lining factory which shut down in fall of 1900.—Woodward Manufacturing Co. began manufacture of shoe nails formerly carried on by Standard Shoe Machinery Co.

Athol. In March, fire damaged mill owned by L. S. Van Valkenburgh and occupied by L. S. Starrett Co.; mill was wooden structure, 4 stories, 100 x 40 feet, erected in 1811. *April.* Millers River Manufacturing Co. started after shutdown of two weeks for repairs.—Hill & Green began work on full time.—Diamond Match Co. shut down owing to difficulty in getting certain grade of wood.—The Porter-Brewer Toy shop began work with about 30 employés. *May.* Fire destroyed picker mill owned by S. J. Handy. *August.* L. S. Starrett Co., tools, closed for 2 weeks' vacation.—Millers River Manufacturing Co. started up after 2 weeks' vacation.

Attleborough. In January, Bates & Bacon sold to Philadelphia Watch Case Co., and plant removed to Riverside, N. J. *February.* Steam pipe burst in the mills of the Hebron Manufacturing Co., causing shutdown for repairs. *April.* Gold Medal Braid Co. shut down for the first time in many years.

Auburn. In January, James Hilton began erection of new shoddy mill, 30 x 20 feet. *July.* W. J. Hogg began manufacture of carpet yarn in the Stoneville worsted mill, which had been closed for a year or more. *August.* Auburn worsted mill, owned by Wilkinson Crossley, of Brookline, purchased by Leopold B. Rosenburg, of New York; to manufacture ladies' dress goods. *September.* Stoneville worsted mill shut down to install new machinery.

Avon. In January, shoe factory of L. G. Littlefield shut down for few days; in April, new machinery installed.

Barre. In April, in consequence of the milk strike, farmers opened the Central Cheese Factory in order to use the milk instead of sending it to Boston; factory dates back to 1865; in May, the milk producers organized a company and purchased the factory from C. F. Atwood as a safeguard against future milk troubles.

Becket. In August, M. E. Ballou & Son, basket makers, started No. 2 mill.

Bellingham. In May, Taft, Murdock, & Co. built addition to woollen mill.

Berlin. In April, mill property of Edmund W. Wheeler destroyed by fire.

BEVERLY. In January, The Beverly Engine and Machine Co. incorporated; authorized capital $200,000; succeeds Beverly Machine Works. —— Woodbury Bros., shoes, consolidated with Murray, Cone, & Co. *February.* Shoe factory of Woodbury Bros. damaged by fire. —— Myron Woodbury, shoe manufacturer, died, aged 47 years. *March.* Mader & Dow, boots and shoes, succeeded by Mader & Hanscom. *April.* H. O. Woodbury, W. Varian, and W. O. Cree formed company to manufacture shoes. *June.* Murray-Cone Shoe Co. incorporated; authorized capital $50,000; succeeds Murray, Cone, & Co.

Billerica. In August, Faulkner Manufacturing Co., woollen goods, resumed work after a week's vacation.

Blackstone. In February, Knight & LeSpade began business as leather manufacturers.

Blandford. In January, Peebles Bros. added grist-mill to sawmill plant.

BOSTON. In January, Harvard Rubber Co. burned out. —— William T. Van Nostrand died, aged 79 years; he began brewing in Massachusetts in 1860 and owned the Bunker Hill brewery from 1871 to 1891, when he retired. —— Henry Guild, of Henry Guild & Son, manufacturing jewelers, died. —— J. G. McCarter Co. incorporated to succeed J. G. McCarter, shoes. —— Hersey, Damon, & Sprague, slippers, succeeded by Damon & Sprague. —— Holmes Co., woollen and worsted goods, incorporated with capital of $20,000.

February. Acme Rand Co. removed to Brockton. —— Syndicate headed by Alexander S. Porter purchased controlling interest in Flagg Manufacturing Co., Globe Buffer Co., and Union Edge-Setter Co., covering 20 shoe machines; total capital, $350,000.

March. McGreenery Bros. & Manning succeeded Boston Cigar & Tobacco Co., and moved to larger quarters. —— Property of Boston Lead Works, consisting of land with brick and wooden buildings thereon, transferred to Boston Lead Manufacturing Co. —— James Breslin, of Quincy Cigar Co., died, aged 56 years.

April. Hallett & Davis Co., pianos, reduced force preparatory to closing business; manufacturing hereafter to be done in the West. —— Walworth Manufacturing Co. began erection of addition to foundry, 4 stories, 200 x 80 feet. —— George C. Davis Co., shoes, sold business to George M. Coburn, Somersworth, N. H. —— Charles H. Sprague, of Damon & Sprague, slippers, died. —— Fires for the month: B. F. Sturtevant Co.'s works totally destroyed; workshop of Lang & Jacobs, coopers' supplies, damaged. —— Putnam Nail Co. shut down indefinitely. —— Chase & Co., shoes, incorporated; authorized capital $250,000.

May. Boston Last Co. began manufacturing lasts.

June. The Atlantic Works increased capital stock and obtained control of East Boston Dry Dock Co's. plant. —— Vose & Sons, pianos, purchased land for erection of new factory, 360 x 60 feet, and power house of 60 x 50 feet. —— The Tongue-Lock Sewing Machine Company incorporated under the laws of the State of Maine, authorized capital $1,000,000, to manufacture sewing machines under the patent of Roswell Carleton. This invention

relates to machines for securing the upper to the sole of the boot or shoe by loops from a single thread inserted through the upper and through a portion of the sole usually known as the "between substance," the bights of the loops being thrown over and locked by tongues cut in one side of the sole. This displaces the old-time method of channelling and the necessity of "filling," and is not only a saving of time but a saving of thread and labor. The invention consists in numerous improvements on the present method of sewing turned shoes; among them being an awl which is adapted to wabble laterally when entering the recess under a tongue, so that its point will be guided by the sides of the recess to the centre.

July. Property of Boston Cordage Co. sold at auction to Cannabis Manufacturing Co., of New Jersey. —— Commonwealth Hygienic Ice Co. started with second largest plant of the kind in the country, designed to turn out 250 tons of ice a day. —— Standard Sugar Refining Co., Whittier Machine Co., and Carter Ink Co. damaged by fire.

September. Temple Glove Manufacturing Co. shut down indefinitely. —— Fires for the month: Building occupied by George E. Messer, furniture; J. F. Jones & Co., lubricating oils; Porter & Stainforth, motors; A. & J. E. Tuttle, patterns; Old Colony Furniture Co.; Massachusetts Mattress & Bedspring Co., and New Departure Trunk Co.; also old Etna rubber mill in Jamaica Plain; and building occupied by M. Blackstone, cap manufacturer.

Braintree. In April, W. S. Lees & Co., of New York city, took five-year lease of all the buildings, except the large wooden building, formerly owned and occupied by A. S. Morrison & Bros., and began manufacture of ball wicking, miners' wick, and mattress tips.

Bridgewater. In January, Jenkins Bros. shut down during installation of new electric light plant. —— L. W. Taylor, formerly foreman for W. B. May, began manufacture of slippers. —— Henry Miller, manufacturer of tacks, died, aged 56 years. *February.* Shawmut Lead Co. started up. *March.* Henry Perkins, iron founder, died, aged 87 years; he began business in 1848. *April.* Shoe firm of McElwain & Co. incorporated under Maine laws, with capital stock of $200,000, under name of the W. H. McElwain Co. —— Shawmut Lead Co. erected addition of about 600 square feet, to be used for a granulating room. —— Bridgewater Brick Co. formed to manufacture brick on the grounds occupied by the Plymouth County Agricultural Society; extensive improvements made in the buildings, and machinery added; output to be about five million bricks annually. *May.* W. H. McElwain Co. shut down gang room for a few days while taking account of stock.

BROCKTON. In January, D. S. Packard & Co., sole leather counters, succeeded by V. & F. W. Filoon. —— Gray & Earle, pattern makers, succeeded by George R. Earle. —— Hurley Brothers retired from firm of N. R. Packard & Co., shoes, and took factory in Rockland. —— Business of Harvey F. Crawford, shoes, sold to W. H. McElwain and others; to continue as the Crawford Shoe Company.

February. M. A. Packard Co., shoes, occupied new addition of 4 stories, 85 x 40 feet, and increased output to 2,400 pairs a day. —— Pope Rand Co., rand manufacturers, began work. —— R. B. Grover Co., shoes, started all departments. —— Luther H. Hollis, retired shoe manufacturer, died, aged 65 years; he began business in 1866. —— Monarch Rubber Co. added manufacture of cement for shoes to product.

March. New company formed under name of The Tougas Machine Co., with capitalization of $200,000, to manufacture machine for cutting rubber soles on a bevel; with one movement the machine cuts out the rubber soles, bevels the edge, and at the same time stamps upon the bottom the trade mark and the size and width of the shoe or boot; the fly wheel which contributes the power makes 240 revolutions a minute, and the soles can be stamped out as fast as a man can feed them into the machine and operate the pressure lever. —— Eaton Co., shoes, moved into space in Chas. A. Eaton No. 2 factory formerly occupied by J. B. Lewis Co., who removed to Randolph. —— F. C. Kingman & Co., shoes, took another floor of the factory in which they are located, giving them about 1,500 square feet extra space.

April. Old Colony Rand Co. added new machinery for the production of Goodyear welts and heels. —— F. C. Kingman & Co. sold factory on Centre Street to Inkley & Johnson, heel manufacturers. —— W. L. Dunbar & Co. sold shoe pattern business to H. J. Dunbar, who continued under name of Brockton Pattern Co. —— William P. Kingman, of William P. Kingman Co., shoes, moved to Cleveland, Ohio, and became member of the firm of Kingman & Worbass, to manufacture boys' and youths' shoes. —— W. L. Emery, leather dealer, died, aged 56 years; he commenced business in Brockton in 1882, and was

associated for a time with Everett T. Packard, but at the time of his death was connected with the Brockton Cut Sole Co. —— Gang room employés of the D. W. Field Co., shoes, were allowed day's vacation owing to the sole leather department being somewhat behind on the work. —— Work on addition to D. W. Field Co. shoe factory begun; completed in June. —— George H. Stevens Shank Company began work after a shutdown of several weeks on account of inability to get steel.

May. Inkley & Johnson, heels, moved business from Rockland. —— United States Die Co. formed and began business. —— Factory building at Campello, formerly occupied by the Standard Rubber Co., together with shafting, electric motors, machinery, and office fixtures, sold at auction to T. E. Eustis, of Boston. —— United States Machinery Co. purchased the business of the Johnson Cementing Machine Co.

June. The George H. Stevens Shank Co.'s factory at Montello, together with the Boston plant, purchased by the Union Shank Co., which had factories at Whitman, Taunton, and Boston. —— The cutting room of W. L. Douglas Shoe Co. shut down for two weeks. —— Brockton Last Co. began erection of 2-story house, 90 x 22 feet, to be used for storing and drying last blocks. —— E. E. Taylor & Co. made addition to shoe factory. —— Smith & Wade, shoe stays, erected new factory of wood, 2 stories, 26 x 56 feet. —— Clarence L. Calkins withdrew from firm of F. C. Kingman & Co., shoes, and business continued by F. C. Kingman. —— Lightning struck woodworking mill of Washburn & Hayward; damage about $1,000. —— Church & Alden, shoes, started up after shutdown of two weeks.

July. Brockton Co-operative Boot & Shoe Co. started up after shutdown of one week, putting union stamp on all its output. —— George A. Carter began erection of modern factory, 35 x 160 feet, for the manufacture of tacks and taps. —— Crafts, Harrington, & Co., shoes, occupied new location in old Packard & Field factory and added new machinery by which the business of the firm was increased nearly one-third. —— Tuck Manufacturing Co. began erection of addition, 75 x 95 feet, two stories, to knife shop in Montello. —— H. B. Walker, well known in the last manufacturing business, began manufacture of iron, tin, and wood sole patterns. —— Cavanaugh Bros. & Knapp purchased plant formerly occupied by Standard Rubber Co. and continued manufacture of rubber goods; additional operatives and much new machinery employed. —— Condon Bros. & Co., boots and shoes, added 1,200 feet to floor space in factory.

August. Nesmith-Roarty Shoe Co., incorporated under Maine laws, succeeded W. F. Nesmith Shoe Co. —— Old Colony Rand Co. added new machinery. —— Clarence L. Calkins began manufacturing shoes. —— Peleg S. Leach, retired shoe manufacturer, died, aged 71 years; he began business in 1851 and retired in 1878, when factory and contents were destroyed by fire. —— John T. Bullivant and George R. Earle began manufacturing shoe patterns.

September. In railroad accident at Avon, Ernest Joyce, of Joyce & Fletcher, shoe manufacturers, was instantly killed; Loring Q. White, of F. E. White Co., shoes; Frank M. Hauthaway, of C. M. Hauthaway & Co., blacking manufacturers; J. M. O'Donnell, shoes; and F. W. Filoon, counter manufacturer, were injured.

Shoe shipments. The number of cases of shoes shipped during the year ending September 30, 1901, as compiled by the *Brockton Enterprise*, is presented in the following table:

Months.	1895-96	1896-97	1897-98	1898-99	1899-00	1900-01
October,	30,915	43,787	45,678	31,299	43,170	44,057
November,	35,805	28,850	37,637	39,748	37,168	46,343
December,	20,527	22,950	34,112	36,769	37,526	33,918
January,	33,465	28,249	38,818	35,476	45,770	39,694
February,	36,110	37,417	38,510	41,998	48,243	45,053
March,	40,556	40,038	46,576	66,524	64,671	70,166
April,	42,150	49,834	57,015	46,544	44,274	50,388
May,	51,242	33,113	36,218	40,378	37,958	57,470
June,	31,681	24,991	29,041	40,254	35,122	44,577
July,	30,455	30,383	38,672	31,732	27,623	38,131
August,	33,100	39,265	43,187	45,944	52,447	64,744
September,	40,029	41,033	56,121	62,563	45,607	47,721
Totals,	426,035	419,910	501,585	519,229	519,579	582,262

Brookfield. In January, factory of Speedway Wheel Co., 4 stories, 135 x 60 feet, together with patents, rights, and goodwill sold to new corporation known as Lashaway Carriage & Wheel Co., for the manufacture of pneumatic speedway and road carriages. The patents owned by the old firm for pneumatic wheel gearing will pass to the new corporation. —— C. H. Moulton & Co., shoes, started up cutting department after shutdown of eight weeks. *February.* C. H. Moulton & Co., shoes, shut down one week for stock taking. —— Lashaway Carriage & Wheel Co. made first shipment of buggies.

CAMBRIDGE. In January, fire damaged stock and building of Warren Bros., manufacturers of tar paper. *February.* The plant in Cambridge, stores and warehouses in Boston, and merchandise, wherever situated, of John P. Squire Co., provision and packing concern, sold at auction; the sale affects property in Lowell, Mass., and Bangor, Me., and includes all property held by the allied companies of the concern in New England. —— George F. Blake Manufacturing Co., machines, began erection of 2-story building, 45 x 34 x 154 feet. *March.* Plant of Dover Stamping Co., kitchen utensils, sold to Joslyn & Co. for $92,500. —— Hoxie Chemical Co. incorporated; authorized capital $1,000. *August.* Fire damaged factory of Shaw & Remby, moldings.

Canton. In March, Canton Manufacturing and Bleaching Co.'s plant sold at auction and bid in by the attorney for the mortgagee.

Charlemont. In February, Frary Manufacturing Co. shut down on account of low water. —— Fire damaged contents of drying house and some of the buildings of the Frary Manufacturing Co.

Charlton. In January, James O. Copp satinet mill, with 60 acres of land and 4 tenement houses sold to Charles A. Hill of Worcester; the mill contained 12 looms, cards, and all machinery necessary for the manufacture of cloth. Mill has been idle since the death of former owner; in July, a new corporation, known as Aldrich Mill Co., formed to manufacture satinet there.

Chelmsford. In January, Success Worsted Co., shoddy, installed number of finishing machines. —— George C. Moore's mills started up after shutdown of few days owing to dull trade. *April.* Chelmsford Foundry Co. closed for a short time on account of low water; new office fitted up by the company. —— George C. Moore's mills resumed work after shutdown of three days. —— Buildings of George C. Moore, Silver & Gay Co., machines, North Chelmsford Mill Supply Co., and the Lowell Model Co. damaged by fire.

Cheshire. In January, Farnum Bros. lime works purchased by New York syndicate with capital of $500,000, for the manufacture of lime and Portland cement. Half a hundred new houses for workmen to be erected and extensive additions made to the plant. *July.* Lightning struck powder house in quarry of Cheshire Lime Manufacturing Co. and caused explosion. —— Plant of Cheshire Glass Manufacturing Co., except the office, destroyed by fire; buildings were vacant owing to lack of business; property owned by a company of which R. V. Wood is president.

Chester. In February, International Emery & Corundum Co. started up tannery mill which had been closed since December. —— The Bowe Granite Co. reorganized to open quarries on the Chester & Becket railroad. *March.* The International Emery & Corundum Co. No. 2 mill shut down for a short time owing to accident to engine.

CHICOPEE. In January, fire damaged plant and machinery of Olmstead & Tuttle, cotton waste. —— Chicopee Manufacturing Co., cotton goods, added new machinery in card room. —— D. J. Curtis & Son, bricks, added manufacture of vitrified brick to product; three men were employed on new kiln. —— J. Stevens Arms & Tool Co. moved office to buildings formerly occupied by the Overman Co.

February. Chicopee Manufacturing Co., cotton, stopped night work in card room owing to low water. —— Cotton waste warehouse of the S. Blaisdell Jr. Co. totally destroyed by fire. —— Belcher & Taylor Agricultural Tool Co. received order through New York firm for a feed cutter to be shipped to Manila, P. I.

March. Dwight Manufacturing Co., cotton goods, added several hundred draper looms, one 550 horse-power engine, and a boiler. —— Work begun on new factory for Chicopee Manufacturing Co., to be used for spooling, warping, picking, and napping departments. —— Heavy rains caused flood in basement of factories of Stevens Arms & Tool Co. on

Broadway.—Dwight Manufacturing Co. shut down rooms No. 1 and 2 owing to accident to shaft between No. 3 and 4 card rooms.

April. Overman Automobile Co., bicycles, leased 20,000 feet of floor space in Ames Building and began installation of new machinery.—Dwight Manufacturing Co. shut down No. 5 mill for a day on account of accident to shaft.

May. Fire destroyed valuable bolt machine of the Springfield Facing Co.'s mill; property is owned by L. S. Brown.—Dwight Manufacturing Co. set up 600 automatic looms and claim that 20 looms can be operated by one man.—American Bicycle Co. closed the Lamb shop indefinitely.—Chicopee Manufacturing Co. shut down portion of machinery in the cotton mills, owing to poor market; present force divided into two parts, and employed on alternate weeks.—The ponds of the Hampden Bleachery were totally drawn off for the first time in 33 years; a leak was found in the flume and a coffer dam built to repair it; the dam proved too weak for the pressure and burst.

June. S. Blaisdell Jr. Co. occupied new quarters built to replace waste house burned; new machinery installed, and thermostat automatic sprinkling system added.—Chicopee Manufacturing Co. started 150 new looms.

July. Overman Automobile Co., bicycles, laid off 25 tool makers and about 12 machinists because their branch of the work was far ahead of others.—Pump used in one of the case-hardening machines at the river plant of J. Stevens Arms & Tool Co. broke, causing shutdown for part of a day.—Night force of Overman Automobile Co., bicycles, discontinued and men went on day work.—Chicopee Manufacturing Co. started up nearly all machinery on full time.—Dwight Manufacturing Co. started mills after shutdown of about a week.—The J. Stevens Arms & Tool Co. shut down for half day owing to break in main belt at river plant.—Chicopee Manufacturing Co. shut down for part of a day owing to breaking of main belt in No. 2 mill.

Clinton. In January, new corporation, known as The Clinton Braid Co., with capital of $7,500, succeeded to business of Clinton Binding Co. *February.* Clinton Worsted Co. began work on double shifts in spinning and carding departments in order to keep up with rest of mill. *March.* Sterling Worsted Co. shut down for two days owing to slack work.—Spinning department of Mill No. 3 of Bigelow Carpet Co. shut down for an indefinite time; curtailment necessary because of over-production. *April.* Bigelow Carpet Co. built addition to boiler house on Union Street and added 2 new boilers; excavation begun for foundation of addition to dyehouse. *May.* Sterling Worsted Co. shut down for few weeks. *July.* Lancaster Mills shut down for two days; in August, installed new combers and lap machines.

Concord. In January, Edward C. Damon died, aged 68 years; in 1854, he began business in the woollen mill, in 1861 went into partnership with his brother, and in 1885 became president of the Damon Manufacturing Co.; firm discontinued in 1892. *April.* George A. Conant died, aged 43 years; he first discovered the method of coating brown paper with bluine, which he patented.

Conway. In January, Darby & Moore, clothing, succeeded by George M. Darby.—Tucker & Cook Manufacturing Co., cotton yarn and thread, added electric lighting plant to No. 1 mill; generator is turned by water wheel; in July, the company's upper mill struck by lightning.

Dalton. In January, Byron Weston Co., paper, began foundation for dust house, wooden structure, 11½ by 17 feet and 24 feet high. *March.* Byron Weston Co. placed Westinghouse electric dynamo of 340 lights in Centennial mill. *July.* Paper works of Z. & W. M. Crane shut down for one week.—Centennial mill of Byron Weston Co. shut down for one week, and Defiance mill for two weeks; two new heaters were added to Defiance mill and slanting roof changed to flat roof.—Berkshire mills shut down two weeks for repairs.

Dana. In August, Cooley & Vaughn started up sawmill after shutdown of one month.

Danvers. In January, Eaton & Armitage, shoes, occupied new quarters and began shipments.—C. C. Farwell & Co., shoes, occupied shop formerly used by Eaton & Armitage.—Donovan, Shea, & Newhall, boots and shoes, shut down for stock taking.—Donovan & Shea, boots and shoes, succeeded by D. F. Donovan & Co. *February.* Fire destroyed small wooden building in rear of Downing, Perkins, & Co.'s shoe factory, used as a laboratory.—Colcord & Walcott, heels, succeeded by N. T. Walcott. *March.* Factory of American Hide & Leather Co. shut down for day and a half owing to flooding of

boilers by rising of Crane river. *April.* Charles P. Kerans, leather manufacturer, began erection of new tannery at plant; tanning heretofore done out of town.

Dedham. In January, Cochran Manufacturing Co., carpetings, began erection of new brick addition to plant, to be 400 x 80 feet, 3 stories. *August.* Merchants Woollen Co. fitted up works for yarn dyeing and installed winding machinery. *September.* George A. Nickerson, president of Arlington Mills, died, aged 47 years. —— Merchants Woollen Co. installed 50 new looms.

Deerfield. In August, Arms Manufacturing Co., leather goods, erected addition to factory.

Dighton. In March, L. Lincoln & Co., paper and paper goods, added machinery to make cone paper for cotton mills. *April.* Dighton canning factory, lot, buildings with engine, and personal property, sold at auction; factory was built in 1888 by building association. *June.* Land and building known as Mount Hope property purchased for new industry of dyeing cloth; addition for drying shed, 100 feet long, to be erected; corporation formed under name of Mount Hope Finishing Co., with capital of $125,000. *August.* L. Lincoln & Co. shut down paper mill for repairs.

Douglas. In January, American Axe & Tool Co. shut down bit shop for a week; in August, began removal of plant to Glassport, Pa.

Dracut. In January, entire weaving department of Beaver Brook mills, woollen goods, shut down for three days.

Dudley. In April, Stevens Linen Works began erection of annex to storehouses, 100 x 52 feet. *July.* Josiah Perry mills, woollen goods, shut down for two weeks.

Easthampton. In May, brick yard of Martin Rich estate purchased by Bartley F. Coyle & Son, contracting masons, and business carried on by new firm. *August.* Nashawannuck Manufacturing Co., clothing, Glendale Elastic Fabrics Co., and Williston & Knight Co., buttons and dress trimmings, shut down owing to accident to boilers. —— Easthampton Rubber Thread Co. built addition of 50 feet, 2 stories with basement, at east end of mill. *September.* Several manufacturing concerns joined in scheme to install underwriters' fire pump with capacity of 1,000 gallons a minute.

Enfield. In April, Woods & Ward shut down box shop for few days to make repairs; new smoke stack 50 feet high and 28 inches diameter erected; in July, shop shut down for a week to make repairs on machines; in August, shut down two days for boiler inspection. —— Enfield Manufacturing Co., woollen goods, shut down for 10 days.

Erving. In June, Millers Falls Co., artisans' tools, began brick addition to shop, 220 feet long, 2 stories high for 147 feet, remainder one story; forge and shipping rooms downstairs. *August.* Washburn & Heywood Chair Co. started up after week's vacation.

EVERETT. In January, New England Bolt & Nut Co. began excavation for erection of building 125 x 175 feet. —— Hampden Cream Co. purchased factory property formerly occupied by Degnio Bros. *February.* United States Steel Co. organized with capital stock of $3,000,000 to manufacture Jupiter steel. *July.* Fire damaged main building and machinery of New England Structural Co., metals and metallic goods. —— James Donovan & Co. established to manufacture shoes and slippers.

Fairhaven. In June, Atlas Tack Co. began erection of new mill to be 620 x 220 feet, one story, with saw-toothed roof to give best possible light; front to be two stories for the offices; power house and chimney with 7 foot flue and 180 feet high will be built; engines will be of 1,000 horse power.

FALL RIVER. In January, Sagamore Manufacturing Co., cotton goods, shut down for one day owing to defective shaft; later, shut down for a day because of injury to other machinery. —— U. S. Bobbin & Shuttle Co. began erection of addition to boiler and engine house, 64 x 10 feet. —— New machinery added by Pocasset Manufacturing Co., Union Cotton Manufacturing Co., Stafford Mills, Parker Mills, and King Philip Mills. —— Stafford Mills installed new electric lighting plant, furnishing about 2,000 lights of 16-candle power. —— Sagamore Manufacturing Co. started up No. 2 mill after 3 days' shutdown. —— Stockholders of Mechanics Foundry & Machine Co. voted to increase capital stock from $8,000 to $10,000, in order to provide funds to cover cost of removal of plant in case change in grade of railroad makes removal necessary. —— Joseph Healy, agent and treasurer of

Osborn Mills, died, aged 73 years; he began career as cotton manufacturer in 1871, when he became connected with the Osborn Mills.——Pocasset Manufacturing Co. shut down for few days on account of injury to main driving pulley in belt tower.——Globe Yarn Mills No. 2 shut down mule room owing to surplus of yarn.——Carding department of King Philip Mill No. 1 and weave room of Troy Cotton & Woollen Manufactory damaged by fire.

February. Frank W. Brightman, treasurer of Stafford Mills, cotton goods, died, aged 50 years; he was at one time in the trading business in the Azores Islands.——Owing to surplus of yarn, the New England Cotton Yarn Co. closed mule spinning departments of Globe Yarn Mill No. 2, and Bennett Spinning Co., New Bedford.——Mechanics Mills erected large number of revolving flat cards.——Mechanics Foundry & Machine Co. purchased land for erection of new foundry.——No. 2 mill of Fall River Iron Works Co. started up after shutdown of several weeks because of accident to engine.

March. Pocasset Manufacturing Co. installed complete electric light plant.——Granite Mills installed 50 new Crompton looms.——Durfee Mills installed new machinery.——The following mills closed from one week to 10 days to curtail production: Chace, Robeson, Merchants, American Linen, Metacomet, Laurel Lake, Davol, Durfee, Richard Borden, Shove, Stafford, Troy, Wampanoag, Granite No. 2, Cornell, Union Cotton Manufacturing Co., Barnard, Flint, Osborn No. 1, Sagamore, Slade, Weetamoe, and Fall River Manufactory.

April. Crystal Spring Bleaching & Dyeing Co. increased capital stock to $125,000; this move was preceded by a reduction from $100,000 to $50,000.——Globe Yarn Mills No. 3 installed 22 Mason cards and 8 speeders.——Arkwright Mills, cotton goods, installed 10 new cards and 4 drawing frames.——Granite Mills added 41 revolving top flat cards for work on long staple cotton.——American Linen Co. put new creels on 250 of their spinning frames.——Two small pulleys broke in weave room of Merchants Manufacturing Co. No. 1 mill, causing shutdown of few hours.——The following mills shut down for one week or less as part of curtailment agreement: Chace, Durfee, Laurel Lake, Robeson, Seaconnet, Stafford, Wampanoag, Mechanics, Tecumseh, Pocasset Manufacturing Co., American Linen, Fall River Manufactory, Flint, Osborn, Troy, Sagamore No. 1, Weetamoe, Union mills Nos. 2 and 4, Cornell, Granite No. 2, Shove, Slade, Barnard, Merchants, Davol, Metacomet, Richard Borden, and Narragansett.

May. American Printing Co. began run of five days a week.——Granite Mills No. 2 shut down for several days owing to accident to engine.——New machinery installed in the Granite, Mechanics, and Sagamore mills.——Accident to pulley in mule room of American Linen Co.'s mill caused shut down of whole plant for nearly two weeks to make repairs.——Algonquin Printing Co. began run of five days a week instead of shutting down.——Barnaby Manufacturing Co. received several carloads of new machinery.——The following mills shut down from one to two weeks, as part of curtailment agreement: Narragansett, Mechanics, Merchants Manufacturing Co., Union, Border City, Fall River Manufactory, Shove, Davol, Richard Borden, Tecumseh, Weetamoe, Osborn, Sagamore, Granite, Barnard, and Seaconnet.

June. As result of conference between representatives of the breweries and Brewery Workmen's union, 9 hours was agreed on as a day's work in 3 local breweries.——Fall River Machine Co.'s storehouse damaged by fire.——Owing to overheating of shafting and pulleys, 4 warps in operation on looms in Narragansett mill weave room were damaged by fire.——Accident to pumps at Seaconnet Mill caused shutdown of new weave shed for one day.——Parts of plant of King Philip Mills shut down owing to damage to boilers.——Merino mill owned by Joseph Healy estate sold to James M. Morton, Jr. for $11,500.——Sagamore Mill No. 2 shut down owing to defective pump.——Following mills shut down for one or more weeks: Stafford, Flint, American Linen, Merchants, Wampanoag, Weetamoe, Slade, Sagamore, and Laurel Lake.——Shove Mill No. 2 shut down for a few days owing to accident to shafting.——Albee-Russell Co., shoes, reduced capital to $13,500.

July. Flint mill shut down for two weeks as part of curtailment agreement, and installed 3 Babcock & Wilcox water and tube boilers to replace 9 upright Manning type boilers.——Fire caused slight damage at the Mechanics Foundry and Machine Co.——Osborn mill No. 2 installed 16 new revolving top flat Whiton cards, 20 combers, and complete set of opening machinery, preparatory to making finer grades of product. No. 1 mill added 41 new cards.——Pocasset Manufacturing Co. installed new railway drawing frames, also new American Machine Co. cards to replace old top flat cards.——Following mills shut down to complete curtailment agreement: Sagamore Mill No. 1, Union Manufacturing Co., Fall River Manufactory, American Linen, Cornell, Merchants, Narragansett, Stafford, Wampanoag, Arkwright, and Flint.

September. Fred W. Harley erected 2-story wooden building, 60 x 40 feet, for silk weaving plant.—— Fall River Manufactory started up after shutdown of seven weeks; 500 wide looms set up in place of looms of ordinary width. —— Shove Mill No. 2 shut down for few days owing to damage by fire. —— American Printing Co. awarded contracts for 3½-story brick addition for dyehouse, to cost $50,000. —— Stevens Manufacturing Co. awarded contract for 2-story spinning mill, 144 x 278 feet, weave shed 100 x 225 feet, storehouse 100 x 50 feet, store shed 80 x 50 feet, and addition to boiler and engine house.

FITCHBURG. In April, American Woollen Co. installed 78 new looms in worsted mill. *May.* American Comb Co., shell and horn goods, moved machinery and plant from Leominster.

September. Iver Johnson Arms & Cycle Co. started up after shutdown for alterations. —— Star Worsted Co. built 2 additions to mills.

Framingham. In January, Gregory, Shaw, & Co., shoes, succeeded by new corporation of Gregory-Shaw Co.; authorized capital $250,000. *February.* Saxonville Mill installed new machinery for manufacture of fine worsted goods. *September.* Gregory-Shaw Co., shoe manufacturers, succeeded by F. Brigham & Gregory Co.; firm originally organized nearly 50 years ago and came to Framingham in 1882.

Franklin. In January, Ray Fabric Co., textiles, erected new building and installed considerable new machinery. *March.* Shoestring company began brisk business but were unable to get good female help although offering good wages and clean, easy work. —— Storehouse of the American Felt Co., woollen goods, damaged by fire; to be rebuilt. *July.* Dunbar Wood Heel Co. incorporated under Massachusetts laws; authorized capital $5,000. *August.* William M. Brown leased shoddy mill owned by Enoch Waite to manufacture woollen blankets.

Freetown. In July, Crystal Spring Bleaching & Dyeing Co. installed 3 new boilers.

Gardner. In January, Lucien G. Dockham, proprietor of Otter River mills, woollen goods, died, aged 65 years. —— Chair factory of Alfred Wyman sold at auction to Charles W. Conant. *September.* Fire damaged building owned by A. N. Pineo and occupied by him for carriage manufactory, also by Jackson & Parcher, toys, and Kendall & Nichols, crutch makers.

Georgetown. In April, factory of A. B. Noyes & Co., shoes, shut down part of a week during which boilers were inspected. *June.* Georgetown Boot & Shoe Co. resumed work after shutdown of a week for stock taking.

GLOUCESTER. In January, George A. Reed & Son, metal workers, erected addition to brass foundry, 47 x 73 feet; also large crane capable of lifting 5 tons, and additional sheds for other machinery. *June.* The Merchant Box & Cooperage Co. erected 2-story addition, 60 x 170 feet.

Grafton. In January, Edward Story's paper box factory shut down for a week owing to break in power rope.

Granby. In June, Frederick Taylor, paper manufacturer, died, aged 85 years; he began business in the firm of Brown & Taylor, occupying a mill in the north part of the town which was burned about 50 years ago; later, he was a member of a stock company which manufactured paper in South Hadley, and retired from business about 1885, when the mill was burned.

Granville. In July, Noble & Cooley closed drum factory for 2 weeks' annual summer vacation.

Great Barrington. In January, Monument Mills, cotton goods, added 200 horsepower motor. *March.* Business of C. R. Brewer Lumber Company closed. *April.* Ashley Falls Marble Co. erected new mill, 50 x 135 feet, one story. —— Riverdale Mills, cotton goods, shut down 4 days for repairs; this is first shutdown in 7 years. *June.* Goran Borg, of Canaan, Conn., leased woodworking department of C. R. Brewer's lumber mill. *August.* Sheridan Woollen Mills shut down.

Greenfield. In February, William G. Rogers Co. organized to manufacture silver plated flat ware, and purchased plant of Nichols Bros. which had been idle 2 years. —— Wiley & Russell Manufacturing Co., machines and machinery, erected addition to plant.

March. E. C. Hartwell & Co., wooden goods, added new machinery and steam heating to factory, and increased number of workmen. *September.* Cutler, Lyons, & Field, shoes, offered plant for sale. —— Wells Bros. & Co., artisans' tools, incorporated as Wells Bros. Co.

Groveland. In February, Groveland Mill No. 1, woollen goods, shut down for a week owing to break in main shaft. *May.* Groveland Mill No. 3 shut down for part of a day owing to accident to engine.

Hardwick. In May, George H. Gilbert Manufacturing Co., woollen goods, enlarged boiler room at No. 4 mill and set up 4 new boilers; in June, installed new machinery; in August, set up new worsted spinning frames.

Hatfield. In February, Porter Machine Works enlarged plant and built addition 14 feet wide on south side.

HAVERHILL. In January, C. W. Tappan Shoe Co. went out of business; no successor. —— Orra I. Foster, slippers, sold business to R. J. Tasker & Co., who sold to Daniel Green Felt Shoe Co., of New York, and business moved there. —— Henry C. Pluff began manufacture of cuffs and collars. —— Improved Gasolene Motor & Automobile Co. organized, to develop air-cooled gasolene engines. —— Chas. W. Arnold & Co., cut soles, incorporated; authorized capital $50,000. —— R. G. Allen & Co. began manufacture of counters. —— Henry Harris, shoes, who has been doing contract work, began manufacturing for himself. —— Factory of Chesley & Rugg, shoes, shut down owing to break in shafting. —— Heavy machinery of International Paper Co. shipped to Berlin Falls, N. H. —— Firm of Collins & Lord formed to manufacture shoe dressings. —— Stocker & Taska began manufacture of boots and shoes. —— E. A. Jennings made improvements in shoe factory and increased number of workmen. —— J. H. Durgin & Son, shoes, shut down factory for a day and a half owing to accident to motor. —— Elmer Murray, shoes, moved from 32 Washington Street to No. 24.

February. M. T. Stevens & Sons Co., woollens, shut down two days to install new boiler. —— Haverhill Pickle works incorporated with capital stock of $10,000, to manufacture pickles, relishes, salads, etc. —— Chick Bros., shoes, put on 12 cutters in men's department. —— John M. Madigan began manufacture of a washing fluid, known as B. & M. mixture. —— Chesley & Rugg shut down entire plant for few days owing to break in heating apparatus. —— H. B. Goodrich, shoes, shut down plant owing to lack of heat caused by break in boiler. —— M. C. Cram sold machinery of Tappan Shoe Co. and filled orders of company at his own factory. —— Henry L. Harris, shoes, formerly doing business as L. M. Harris, discharged from bankruptcy and started again. —— E. F. Lang, shoes, admitted John D. Crimmin to partnership and name changed to E. F. Lang & Co.; Mr. Crimmin retired in April.

March. J. W. Proctor, soles, heels, and cut stock, started up factory after shutdown of a week for stock taking. —— Searle & Webster shut down factory and sold machinery, preparatory to opening with new machinery for fine and hand-sewed boots and shoes. —— J. H. Winchell & Co., boots and shoes, partitioned off portion of first floor of factory for retail store. —— D. T. Dudley & Co. removed shoe-lace department to factory formerly occupied by Noyes, Read, & Co.

April. The following firms shut down owing to high water: W. B. Thom & Co., hats; J. H. Winchell & Co., boots and shoes; M. T. Stevens & Sons Co., woollen goods; James P. Busfield, machines; and Goodrich & Porter, heating apparatus. —— Horace I. Pinkham, boots and shoes, added new machinery to vamp plant, leased another floor in Bullen block, and increased number of workmen. —— Savels & Johnson, lasts, closed business; machinery purchased by Blake Last Co., who increased capacity by taking another floor. ——Saturday half holiday inaugurated among employés of union shoe shops. —— A. A. Brackett, heel manufacturer, burned out. —— Gale Shoe Manufacturing Co. incorporated; authorized capital $100,000.

May. Night work suspended at factory of M. T. Stevens & Sons Co., woollens, because of strike of night spinners. —— Chesley & Rugg added six new Goodyear sewing machines to stitching room. —— J. H. Winchell & Co., boots and shoes, shut down stock fitting room for few days for stock taking. —— Fire damaged factory of T. S. Ruddock, boots and shoes.

June. Fire caused slight damage at factory of H. E. Guptill, boots and shoes. —— Pray, Small, & Co., boots and shoes, began work of moving from Auburn, Me. —— Blake Last Co. added another lathe, making 6 now in operation and completing 2 distinct lines of last making machinery.

July. Fire damaged plant of Union Potato Chip Co. —— H. B. George & Co., boots and shoes, obtained additional space and increased output. —— A. D. Green, of Boston, became partner with E. C. Prescott, pattern and tip maker, under firm name of A. D. Green & Co.; Boston office opened on Summer Street. —— Kimball Bros., of Lawrence, secured Green factory and began manufacture of McKay sewed and Goodyear welt men's shoes. —— C. H. Hayes furnished box factory with new planer weighing 6 tons. —— Herman E. Lewis, boots and shoes, moved to larger factory owing to increased business. —— Pray, Small, & Co., boots and shoes, completed setting up machinery, and cutting room in full operation.

August. Briggs-Beiman Co., edged shoe tools, added new machinery. —— Water pipe burst and caused damage to stock of Hussey & Hodgdon, shoe manufacturers. —— Chesley & Rugg added new line of welt machinery.

September. Warren Kimball & Son leased factory formerly occupied by M. C. Cram, and began renovating and repairing; new machinery to be added in Goodyear department.

Shoe shipments. The number of cases of shoes shipped during the year ending September 30, 1901, as compiled by the *Haverhill Gazette*, is presented in the following table:

Months.	1895-96	1896-97	1897-98	1898-99	1899-00	1900-01
October,	20,847	26,327	25,156	24,873	21,062	23,723
November,	25,546	21,227	25,083	25,935	39,283	31,796
December,	23,875	43,143	42,734	39,466	39,078	32,657
January,	38,709	41,190	38,931	40,514	47,078	35,370
February,	34,411	43,176	40,509	41,356	47,043	34,865
March,	36,668	44,365	54,816	54,989	58,575	51,130
April,	47,572	51,358	39,020	44,481	37,267	45,328
May,	33,361	34,939	20,200	42,894	31,017	36,918
June,	30,706	28,679	33,350	42,284	23,053	33,162
July,	29,694	29,923	24,125	27,466	17,182	28,933
August,	22,688	22,621	24,090	36,715	24,722	28,082
September,	21,617	32,638	30,966	30,604	21,427	28,445
Totals,	365,694	419,586	398,980	451,577	406,787	410,409

Hinsdale. In February, Hinsdale Woollen Co. shut down waiting orders for new season. *July.* Dyehouse, carding room, and spinning room of Hinsdale Woollen Co. shut down between seasons; in August, shut down for short time owing to dull business; resumed in September.

Holbrook. In February, fire damaged shoe factory of Whitcomb & Paine Co. *April.* Elijah W. Porter, retired boot and shoe manufacturer, died, aged 65 years.

Holden. In February, Eagle Lake Woollen Co. shut down half the plant owing to break in engine. —— Dawson Manufacturing Co., woollen goods, installed one set of cards, one new Johnson & Bassett mule, and built addition to mill. —— Jefferson Manufacturing Co., woollen goods, shut down 5 weeks to make extensive repairs and install new boiler. —— C. G. Wood Co. shut down 3 days owing to broken shaft. *March.* Jefferson Manufacturing Co. started up after shutdown for repairs; in July, closed mill 4 days to make repairs on chimney; in September, completed new flume and began running with water power.

Holliston. In April, National Impervious Paper Co. started up after week's shutdown.

HOLYOKE. In January, Merrick Thread Co. shut down for holiday. —— C. F. Church Manufacturing Co. incorporated with capital of $50,000, to make specialties in furniture. —— Mill owned by the Water Power Co. and occupied by Connor Bros., woollen goods, damaged by fire. —— Both mills of Riverside division of American Writing Paper Co. shut down for one week owing to dull market. —— Merrick Thread Co. resumed on

full time, having run on short time for several weeks. — Fire damaged broom shop of Stewart Thompson in building owned by A. L. Shumway. — Massasoit division of Holyoke Writing Paper Co. began operations after shutdown of over a month, affecting 150 workmen.

February. Merrick Thread Co. added over a hundred deliveries of Tweedale & Smalley's electric stop-motion drawing frames. — Holyoke Paper Co. division of American Writing Paper Co. added 2 new Marshall repeating engines.

March. Lewis J. Powers, Walter Powers, Philip C. Powers, and L. J. Powers, Jr., majority of stockholders of Connecticut River Paper Co., petitioned for dissolution of corporation; hearing set for first Monday in April. Company organized October 13, 1888, for manufacture of paper and paper goods with capital stock of $150,000 in 1,500 shares. — Merrick Thread Co. No. 2 mill shut down one week to make alterations and repairs, and on account of delay in arrival of cotton shipment.

April. Riverside Paper Co. shut down owing to high water. — Holyoke Thread Co. increased capital stock from $15,000 to $20,000, and force of men from 10 to 25; company bought old Brown Manufacturing Co. building, and makes silk, linen, cotton, and mercerized thread.

May. Woollen mills of Connor Bros. shut down indefinitely owing to attachments placed on property; about 200 workmen affected.

June. Farr Alpaca Co., worsted goods, began addition to mill, to include extension 260 x 62 feet to stock room and 160 x 58 feet to No. 1 mill; new machinery added.

July. Peter J. Sullivan, formerly with E. J. Gorman of Kaffir Cigar Co., began manufacture of cigars. — Kaffir Cigar Co. dissolved, E. J. Gorman succeeded. — William Skinner Manufacturing Co., silks, shut down 2 weeks for usual annual vacation. — Lyman Mills, cotton goods, shut down 4 days owing to excessive heat. — C. F. Church Manufacturing Co. began manufacture of furniture, employing 11 men; selling done through New York jobbing house. — Beebe, Webber, & Co., woollen goods, increased capacity; added 20 more looms, and employed about 25 more workmen. — Fire damaged rag room in No. 2 mill of Whiting Paper Co. — Farr Alpaca Co., worsted goods, began addition, brick, 200 x 54 feet, 4 stories.

August. Power house erected to contain turbines and transmission machinery for Ford Bit Co. and Massachusetts Screw Co.

September. Holyoke Thread Co. increased capital stock from $30,000 to $100,000. — Fire damaged mill of Chemical Paper Co. — C. F. Grosvenor Woollen Co., of Palmer, purchased shoddy mill machinery of estate of Connor Bros.; mill leased by them from the Holyoke Water Power Co. for the purpose of manufacturing.

Hopedale. In January, shops of Draper Co., machines, started up on full time. *February.* Water pipe burst in ring shop of Draper Co., and caused shutdown of half day for 60 workmen. *June.* Spindle mill of A. A. Westcott & Son destroyed by fire.

Hopkinton. In January, Woodville Shoe Co. shut down for few days to take account of stock. *March.* Woodville Shoe Co. shut down.

Hudson. In January, Apsley Rubber Co., rubber shoes, increased capital from $200,000 to $450,000. *February.* Bradley & Sayward closed shoe factory one week for repairs. *March.* Tower Bros.' machine shop shut down owing to water flooding basement and engine room. *April.* C. M. Brett & Co., boots and shoes, began addition to factory and other improvements which will increase production over one-third.

Hyde Park. In January, N. Y., N. H., & H. R.R. began erection of brick and iron car shops, 2 stories, to cost $500,000, and to include mill and truck shops in one building; paint, erecting, and freight shops, also machine and blacksmith shops in one building; dry kiln, store room, and office building of brick. *June.* B. F. Sturtevant Co. purchased tract of 15 acres for erection of large plant; in September, began building. *September.* The American Loom Co. bought by a syndicate allied with the American Cotton Co.

Ipswich. In July, W. F. Thompson & Co. began manufacturing shoes.

Lancaster. In January, Lancaster Manufacturing Co., cotton yarn, set up new spinning machines; mill has been running night and day for two years, employing 35 hands.

LAWRENCE. In January, Atlantic Cotton Mills installed new spinning and twisting machinery greatly increasing production; new engine set up to take the place of one broken. — Upper Pacific Mills, cotton goods, replaced 1,400 28-inch looms by 43-inch

Draper looms. — Arlington Mill, cotton goods, set up engine of 1,500 horse power, the largest in the city; the fly wheel, 30 feet in diameter, weighs 75 tons, and will be driven at 65 revolutions per minute. — New twisting, carding, and spinning machinery installed at Lawrence Duck Co. — Washington Mills, worsted goods, began new engine building, adding electrical machinery. — Leland Belting Co., leather goods, closed business; James Marshland purchased top roll business and removed it to shop on Methuen Street; control of worsted roll covering department passed to Arlington Mills; machinery and fixtures of old firm sold. — Everett Mills, cotton goods, made many changes in machinery, including a large number of new looms. — Fire started in picker department of Atlantic Cotton Mills, and damaged stock and property. — Lawrence Dye Works erected new 2-story building 100 x 60 feet, also three large brick additions to main building; 100-horse-power boiler and 150-horse-power engine installed.

February. Hartley Wool Scouring Co. resumed operations after shutdown owing to financial difficulties. — Knitted Fabrics Co. increased capacity and installed new machinery. — Arlington Mills resumed work after shutdown to set up new engine.

March. Pacific Mills, woollen goods, added worsted spinning frames. — Lawrence Duck Co. shut down for few days to put in new wheel.

April. Following mills shut down wholly or in part on account of high water: Upper Pacific, cotton goods; Washington, worsted goods; Everett, cotton goods; Russell Mills, paper; Atlantic and Lower Pacific, cotton goods; Merrimac Paper Co.; Lawrence Dye Works; Farwell Bleachery, and Arlington Mills. — Following mills were closed for holiday: Arlington, Crescent Worsted Co., Pacific, Atlantic Cotton, Pemberton, Kunhardt, and Everett. — Archibald Wheel Co., carriages, shut down owing to accident to engine.

July. Following mills closed from one to three days on account of holiday: Upper and Lower Pacific, Atlantic, Pemberton, Washington, Everett, Kunhardt, Lawrence Duck Arlington, and Crescent Worsted. — Twisting room of Lawrence Duck Co. shut down for few days owing to breaking of large counter shaft.

August. Atlantic Cotton Mills added new machinery and put 100 dobbies on looms. — Mitchell Paper Co. started up after long shutdown. — Washington Mills, worsted goods, installed 4500-horse-power engine. — American Woollen Co. purchased Prospect and Globe worsted mills; started up in September. — Wamesit Mills, machines and machinery, purchased by Robert Carruthers, reed manufacturer, of Lowell.

September. Everett Mills, cotton goods, resumed; during shutdown installed number of new looms. — Pacific Mills started up after shutdown of 10 days. — Lawrence Machine Co. erected extension 84 x 120 feet.

Lee. In February, several mills shut down on account of low water. — H. C. Clark & Son Machine Co. shut down to install steam engine. *March.* Edgar S. Merrill purchased machine shop, factory, and sawmill of John McLaughlin; machine shop will be used for grist-mill, and sawmill plant will be improved. *April.* Hurlbut Paper Manufacturing Co. division of American Writing Paper Co. installed 8 boilers.

Leicester. In March, Andrew Howarth & Sons, woollen goods, resumed work after 2 weeks' shutdown. *July.* Chapel Mills Manufacturing Co., woollens, and Valley Woollen Mills closed for ten days' vacation. *September.* E. G. Carlton & Sons, woollen goods, began erection of new brick building for boiler and picker rooms.

Leominster. In January, United States Thread Co. began work with 15 hands; large dynamo was placed in engine room to furnish light for factory. — Sorting room of George W. Wheelwright Paper Co. started up after brief shutdown. — Merrick Puffer, of Leominster Manufacturing Co., shell and horn goods, died, aged 65 years. — Warren Goodale & Co., shell and horn goods, installed boiler and engine. *February.* Fire damaged factory of F. G. Smith Piano Case Co. *March.* White Hart Cigar Co. increased capacity. — Wellington Piano Case Co. began extension to plant. *April.* W. D. Earl & Co., shell and horn goods, shut down indefinitely. *May.* American Comb Co., shell and horn goods, moved machinery to Fitchburg. *June.* Foundation for new Viscoloid Company's factory begun. *July.* Richardson Piano Case Co. shut down two weeks to install new boiler. — George W. Wheelwright Paper Co. shut down for part of week on account of accident to machinery.

LOWELL. In February, T. C. Entwistle increased capacity by purchase of lower part of wooden block formerly occupied by Joseph Miller; the original space in the whole plant for making cotton machinery was 625 feet; at present there are 21,250 feet in the factory. — New mill of Shaw Stocking Co. dedicated with concert by orchestra, dancing, and collation.

March. Lawrence Manufacturing Co., hosiery and knit goods, voted to increase present capital from $750,000 to $1,250,000; as this was amount of capital under which company was organized and it was reduced to lower amount after charter had been obtained, it was not necessary to refer the matter to Legislature. —— William W. Smith, one of the proprietors of Eagle Foundry Co., died. —— Tremont & Suffolk Mills, cotton goods, erected new storehouse for cotton, 128 x 96 feet. —— Appleton Co., cotton goods, added revolving top flat cards. —— Perham-Stickney Co., organized with capital of $1,000,000, to manufacture Perham loom, pickers, drawing frames, and spinning frames, in Atherton machine shop.

April. Owing to high water the following mills shut down, either wholly or in part: Massachusetts, Prescott, Boott, Merrimack, Middlesex, U. S. Bunting, Lawrence Dye Works, Tremont and Suffolk. —— Holders representing majority of stock of Lowell Manufacturing Co., carpets, petitioned Supreme Court of Suffolk County, for decree dissolving corporation. —— T. C. Entwistle, cotton machinery, formed stock company under name of T. C. Entwistle Company. —— Most of the large mills shut down for the holiday, except the Lawrence Manufacturing Co. and the Appleton Co.; Massachusetts Mills closed for one week; Tremont and Suffolk ran one-fourth of works.

May. Fire damaged plant of Fifield Tool Co.; the main building was erected in 1893 by E. G. Baker & Co., and was 60 x 250 feet, 2¼ stories; there were 2 L's 60 x 120 feet, 2¼ stories, and an addition, built in 1900, contained two of the largest planers in the United States; exterior of building was covered with sheet steel; corporation was formed in 1894 with capital stock of $150,000. —— Thorndike Manufacturing Co., elastic web, purchased by Josiah Harriman; company was established in 1870, and employed 44 hands. Mr. Harriman is sole owner of 4 elastic web factories and employs 110 hands. —— Fire destroyed cotton waste establishment of Otis Spofford, known as Butler batting mill. —— Foundry of Doherty Bros. started up after shutdown of one week on account of fire in Fifield Tool Co.'s works. —— New England Shuttle Co. began manufacture of shuttles and shuttle irons.

June. Merrimack Manufacturing Co., cotton goods, installed new combing machines. —— Middlesex Co., woollen goods, shut down 10 days owing to accident to driving pulley.

July. Massachusetts Cotton Mills replaced old looms with Draper looms. —— Middlesex Co. shut down for a week owing to breaking of large driving pulley. —— John Pilling Shoe Co. shut down indefinitely owing to dull trade. —— Middlesex Co. shut down all but weaving and finishing departments 2 weeks for repairs.

August. Pickering Manufacturing Co., hosiery and knit goods, erected new storehouse. —— Fifield Tool Co. voted not to rebuild burned factory but to go out of business. —— Boott Cotton Mills added number of spinning frames. —— Merrimack Manufacturing Co. built addition to packing department. —— Middlesex Co. resumed work after 5 weeks' idleness.

September. Fire damaged building of American Card Clothing Co. and finishing room of Merrimack Manufacturing Co. —— Dyehouse, 40 x 300 feet, for Lawrence Manufacturing Co., hosiery and knit goods, completed. —— Bay State Mills, woollen goods, began work on foundation for addition.

Ludlow. In February, Ludlow Manufacturing Co., linen goods, dedicated new mill by entertainment of fully 3,500 people with concert, dance, and supper; mill was designed by engineering department of the company, is red brick, with brownstone trimmings; at southwest corner is 130-foot tower bearing 3,000-pound bell and clock with 12-foot dial; the three stories have 4½ acres floor space, with gallery above centre of upper floor for distributing raw material to machines below; ground floor of main building is 433 x 128 feet, and L is 147 x 69; 6 electric elevators handle goods and raw materials, and light is supplied from 1,276 incandescent bulbs. *April.* Portion of machinery in No. 5 Mill of Ludlow Manufacturing Co. damaged by fire.

LYNN. In January, American Heel Co. began work. —— Day-Wood Heel Co. dissolved. —— D. A. Donovan & Co., shoes, added 5,000 feet to floor space by taking upper portion of factory, corner Willow & Oxford streets. —— T. Frank Tyler, molded shanks, removed to ground floor of building occupied by John Lancy, Jr. —— Hoyt, Rowe, & Co., slippers, took more floor space in Pevear building. —— George W. Belonga & Co., shoes, added new machinery and rearranged plant. —— Albert J. Lyons, of counter firm of Morton & Lyons, Percy F. Munsey, and John G. Warner formed corporation for manufacture of molded counters, under style of Lyons Counter Co. —— John Lane, of John Lane & Son, slippers, died, aged 64 years; he came to the United States from England in 1885. —— T. J. Donovan, formerly with Harney Bros., began manufacture of misses' and children's shoes. —— Foot Form Shoe Co. and M. I. Kelley, shoes, removed to Elder building,

Arch St. — L. N. Pinkham, shoes, removed to 505 Washington St., and Hoyt & Rowe, shoes, occupied space vacated by L. N. Pinkham. — Eastern Electric Co., of Middleton, moved to Lynn; company was formed in 1896 for the manufacture of incandescent lamps, making 1,500 to 2,000 lamps daily and now expect to make double that number.

February. George Fuller, retired shoe manufacturer, died, aged 61 years. — Brophy Bros. Shoe Co. discontinued annex to factory, known as "back shop," and paid off men. — Hoyt, Rowe, & Co., slippers, succeeded by Hoyt & Rowe. — F. A. Goddard began manufacture of toplifts. — J. B. Grant, shoe patterns, discontinued business; no successor. — Luddy & Currier, shoes, added lasting machines. — Munsey Shank & Counter Co. added new machinery. — Parker Bros. Manufacturing Co., boot and shoe findings, purchased stock and fixtures of Wm. A. Hill & Co. and leased additional floor space. — Hall & Sprague Shoe Co. began business.

March. Morning Star Shoe Co. increased capacity. — Williams, Clark, & Co., shoes, increased floor space. — Randall-Adams Co., shoes, incorporated; authorized capital $40,000. — J. E. Howard, formerly with J. B. Renton Co., began manufacturing pasted innersoles. — Melville S. Nichols died, aged 65 years; he began shoe manufacturing in 1858. — Morrow Counter & Heel Co. incorporated; authorized capital $10,000. — James E. Phelan Shoe Manufacturing Co. moved to building formerly occupied by Brophy Bros. — H. D. Floyd, counters, discontinued that branch, to engage in the manufacture of shoes.

April. Walton & Logan Co., shoes, increased capacity by 10,000 additional feet of floor space. — Breed & Bachelier, cut soles, increased manufacturing capacity 3,000 feet. — John S. Cushman, who purchased slipper business of Howe, Cushman, & Stocker, and Frank L. Cushman formed new firm of Cushman & Cushman. — Breaking of main shaft on engine caused shutdown for 2 days in factories of J. B. Thomas & Tarr, Mrs. C. H. King, Chas. E. Sprague Box Co., Frank Keene Co., W. H. Tuttle, and Faunce & Spinney. — R. J. Breed, cut soles, discontinued. — E. T. Ricker & Co., boots and shoes, succeeded by Miller & Ricker. — Hall & Sprague Shoe Co. sold to Amos F. Bailey who will manufacture infants' turned shoes. — Torsey & Campbell began manufacturing men's and women's slippers. — Fire in Elder building damaged stocks of H. R. Ford & Co., T. J. Donovan, and Mrs. M. A. Kelley, shoes; Faxon & Ludden, wood heels; Crosman Box Co. and Vella Star Heel Co.

May. George Purdon, retired morocco manufacturer, died, aged 63 years. — Miller & Ricker, shoes, increased capacity. — George D. Merrill & Co. succeeded shoe firm of Merrill Bros.; P. W. Hessberg, of M. Hessberg, Richmond, Va., is new partner. — Thos. W. Gardiner began addition to last factory, and added 4 turning lathes. — Floyd & Johnson, shoes, succeeded H. D. Floyd. — M. S. Skinner & Co., heels, succeeded by M. S. Skinner Co. — Ford & Belonga began manufacturing shoes. — Torsey & Campbell began manufacturing slippers.

June. P. L. Belonga & Co. began manufacturing infants' soft soles. — Astral Shoe Blacking Co. began manufacturing shoe polishes. — Redfern Shoe Co. retired.

July. Gardiner, Beardsell, & Co., shoes, increased capacity. — Cushman & Hebert, shoes, occupied quarters of P. H. Nourse & Co., who moved to shop vacated by Mr. Treen. — Fire damaged McKay department of William Porter & Son, shoes. — Cutler & Ames, counters, moved to larger quarters. — Fuller Chemical Co. formed to make electric sole bleacher, blacking stains, paints, and shoe supplies. — Plant of Fosslitch Leather Co. damaged by fire. — Hadley Cement Co. began manufacturing cements, blackings, and dressings. — L. L. Daily began manufacturing shoes. — Hennessey Shoe Co. began erection of addition to factory. — Timson & Co. began manufacturing shoes. — Thomas A. Kelly & Co., shoes, added new boiler and vats. — Thomas Keck & Sons closed cut-sole factory for one week. — T. J. Donovan, boots and shoes, admitted F. A. O'Brien; firm name changed to T. J. Donovan & Co. — Innersole & Spring Heel Co. began manufacturing shoe stock.

August. J. B. Renton Company, shoe stock, reduced capital stock from $125,000 to $75,000.

September. Frank Keene Co., shoes, increased floor space by addition of room in adjoining building. — Fire damaged plant of Parker Bros. Manufacturing Co., shoe findings.

MALDEN. In April, Boston Rubber Shoe Co. started up after shutdown of one month. *June.* Malden Electric Co. increased boiler capacity and installed Green Economizer. — George P. Cox Last Co.'s plant damaged by fire. *July.* Webster & Co., leather, shut down tannery 2 weeks for repairs. *September.* Charles Niedner, linen fire hose, began addition, 100 x 50 feet, 2 stories.

Marblehead. In August, William W. Denning began manufacturing shoes.

MARLBOROUGH. In February, Marlboro Machine and Lamp Co. installed new machinery. *March.* S. H. Howe Shoe Co. added new machinery for treeing, buffing, and counter cutting. *April.* Spalding Manufacturing Co. added manufacture of sleighs to product. *August.* Timothy A. Coolidge, retired shoe manufacturer, died.

Maynard. In January, Assabet Mills, woollen goods, installed 10 Kershaw web feeding machines for finisher cards.

MEDFORD. In March, fire damaged part of Boston Steel and Iron Company's plant known as the west wing. *August.* Glenwood Works began foundation for addition to dyehouse, to be of brick, 2 stories, 120 x 60 feet.

Medway. In January, Ray & Wilson, cotton waste, shut down on account of low water. *February.* Madden-Curtis Shoe Co. shut down during erection of addition to factory. *May.* Ray & Wilson, cotton waste, started up after shutdown of few days owing to high water; later, built new stock house at lower shoddy mill to replace one destroyed by fire recently; in September, completed repairs.

Methuen. In January, knitting mill of Swain Manufacturing Co. started up after long shutdown. *March.* Knitted Fabrics Co. shut down for few days to install new machinery. *June.* Methuen Co. shut down cotton mill for an indefinite period owing to lack of orders.

Middleborough. In February, Albert Alden, retired straw goods manufacturer, died, aged 83 years. *June.* Leonard, Shaw, & Deane, shoes, closed a week for stock taking.

Milford. In January, partnership of Clapp, Huckins, & Temple, shoes, dissolved, succeeded by new firm of Huckins, Temple, & Wood. *February.* Magid-Hope Silk Manufacturing Co. shut down for an indefinite time; in April, new company formed, under name of National Silk Yarn Co. *March.* G. H. Cutting Granite Co. incorporated; authorized capital $200,000. —— William Lapworth & Sons, elastic webbing, added six new looms. —— Milford Shoe Co. combined two factories in one and made additions to old factory. *July.* United Shoe Machinery Co. purchased needle business of Lilley & Co.; this business was started in Hopedale in 1849 and moved to Milford in 1866; new owners will take business to one of their several plants.

Millbury. In January, Bowden Felting Co. shut down for two days owing to shortage of orders. —— Picker and wheel houses of C. T. Aldrich, woollen goods, destroyed by fire. *February.* Millbury Scouring Co. began addition to plant, to be of wood, 40 x 32 feet, 2 stories. —— C. T. Aldrich started up after repairing damage done by fire. *May.* Pinafore Cotton Mill shut down for indefinite time owing to dull trade. *July.* Ramshorn Mills, woollen goods, started up after shutdown of two weeks. *August.* William Leventhal, of Boston, leased Ramshorn Manufacturing Co.'s plant for manufacture of men's suitings. *September.* Mayo Woollen Co. purchased plant of Wheeler Cotton Mill Co.; manufacturing to begin at once.

Millis. In January, plant of National Flax Fibre Co. completed and all departments running on full time, manufacturing crashes, towels, and other linens from American grown flax.

Monson. In January, ground broken for addition to Reynolds mill, 40 x 88 feet, 2 stories, to be used for dyehouse; A. D. Ellis recently purchased mill at auction. *April.* Cushman & Sons, woollen goods, shut down few days for repairs. *June.* South Monson straw shop property sold at auction to Ferdinand Langwald and machinery changed to looms for worsted manufacture. *July.* A. D. Ellis shut down part of plant owing to accident to engine. *September.* S. F. Cushman & Sons, woollen goods, ran out stock preparatory to shutting down for 6 weeks.

Montague. In January, Turners Falls Cotton Mills added new machinery. *February.* Massachusetts Brick Co. made repairs at Welch brickyard and added new boiler room and boiler. —— International Paper Co. added new machinery. *April.* Esleeck Paper Mill shut down for repairs. —— Keith Paper Co. added new folding machine and cutter.

Natick. In April, plant and stock of M. H. Hopf & Co., boots and shoes, damaged by fire. —— B. F. Moran, boots and shoes, retired from business; no successor.

Needham. Mosely & Co., hosiery and knit goods, erected 3-story addition, 30 x 20 feet.

NEW BEDFORD. In January, business of George Delano's Sons and that of Homer Bros. purchased by F. L. Young & Kimball, manufacturers, importers, and dealers in oil, of Boston. —— Stockholders of A. L. Blackmer Co. voted to increase capital stock from $20,000 to $30,000; company expects to build addition to plant.

February. Snell & Simpson began manufacture of crackers, etc. —— Soule Mills, cotton yarn and thread, incorporated; authorized capital $600,000; mills contain about 60,000 spindles. —— Fire destroyed finishing shed of Oneko Woollen Mills, owned by Holden, Leonard, & Co., of Boston.

March. Henry C. Fowler, loom harness manufacturer, died, aged 53 years; he began making looms in 1885, with one machine of English make. —— Wamsutta Mills, cotton goods, added cotton combing machinery. —— Pierce Manufacturing Co., cotton goods, added considerable number of spinning frames in new addition.

April. Potomska Mills Corporation, cotton goods, installed 25,000 new frame spindles and French and German combers. —— Pierce Manufacturing Co. added 200 new fancy looms. —— Bennett Spinning Co. added 20 new spinning frames. —— New Bedford Manufacturing Co. passed resolution to close mill for two days over the holiday, owing to dull business.

May. Erection of new spinning mill for Soule Mills begun, to be four distinct buildings with all conveniences and improvements.

June. The Acetylene Machine Manufacturing Co. began operations in building owned by George F. Bartlett.

July. Factory property of Rhodes Eyelet Co. purchased by Eppler Welt Machine Co., a new corporation.

August. Morse Twist Drill & Machine Co. built addition to works. —— Hathaway-Coniff Mechanical Warp Stop-Motion Co. incorporated under Rhode Island laws; authorized capital $200,000. —— Contract awarded by Henry T. Bulman for stocking factory, of brick and stone, 82 x 42 feet with L 34 x 20 feet and stair tower 17 x 17 feet, 4 stories; L 2 stories, main building partly 3 and partly 4 stories.

September. Potomska Mills Corporation installed electric lighting plant of 1,500 lights. —— Weave shed completed for Soule Mills Corporation.

Newbury. In January, Benjamin Pearson, Sr., died, aged 78 years; he began business with his son Benjamin Pearson, Jr., in 1875, and at the time of his death was president of the Byfield Snuff Co.

NEWBURYPORT. In January, B. E. Cole & Co., shoes, increased capacity by taking second floor of building occupied by A. F. Ross & Co. —— Trouble with boiler at silver factory of Towle Manufacturing Co. caused shutdown until new one could be put in. *February.* Fiberloid Co. purchased land for erection of 2-story brick addition to factory. —— Towle Manufacturing Co. started up after shutdown of 18 days. *March.* Essex Manufacturing Co. succeeded Essex Heel Co., dissolved. *April.* Edward E. Ling, of Scarboro Beach Packing Co., Portland, Me., leased building in the John Currier, Jr., ship yard; company will pack in tins, clams, fish, and vegetables, employing about 50 persons. *May.* Barton Shoe Co. increased facilities for producing infants' soft-soled shoes. *July.* Towle Manufacturing Co. started up after summer vacation. *September.* N. D. Dodge & Bliss, shoes, built 3-story addition.

NEWTON. In January, work begun on new mill for Cherokee Turkey Red Dye Co. *February.* Boston Paper Co. closed mills. —— Plant of Nonantum Co., worsted goods, sold under mortgage to S. Eugene Ames; to be remodeled and operations resumed; in April, sold again at auction to Walter A. Webster, of Boston. *June.* Fire destroyed planing mill of Henry F. Ross.

NORTH ADAMS. In January, carriage manufactory of W. H. Turner destroyed by fire. —— Wilkinson & Bliss shoe factory purchased by Fred F. Dowlin. —— Colonel John Bracewell, of Windsor Manufacturing Co., died, aged 64 years. —— North Adams Brush Co. removed to Clarksburg. *February.* Eagle Mill of Windsor Co., print works, shut down for few hours owing to breaking of large belt. *March.* C. F. Sampson Mfg.

Co., shoes, shut down indefinitely owing to business difficulties. —— Shoe factory of Fairfield, Millard, & Co. closed and business transferred to factory of N. L. Millard & Co. *April.* Bartlett lumber mill sold to S. P. Thayer, who sold to S. B. Dibble Lumber Co. —— Henry Clay Bliss, retired woollen goods manufacturer, died, aged 82 years. *May.* N. L. Millard & Co. set up new 150-horse-power engine. *June.* All cigar manufacturing shops closed to take inventory ordered by the Government. —— Blackinton Co., worsted goods, shut down indefinitely. *August.* Greylock Mills, cotton goods, let contract for addition to plant, to cost about $6,000. —— Webber Bros., shoes, began addition to factory; new part will be used for Goodyear welts and old shop for McKays. —— Johnson Manufacturing Co. and Dunbar Mills Co. consolidated to manufacture cotton goods; Johnson M'f'g Co. began business in 1850, incorporated in 1873. —— Blackinton Co., worsted goods, started up. *September.* Greylock Mills built addition for combing room. —— Eagle Mill of Windsor Co. shut down.

NORTHAMPTON. In March, Northampton Shoe Co. organized; authorized capital $10,000. —— Frank H. Dinsmore, of Dinsmore & Jager, manufacturers of banjo and violin supplies, died, aged 42 years. —— Norwood Engineering Co. began foundation for addition to machine shop. *April.* E. E. Wood Cutlery Co. sold business to W. A. Rogers Cutlery Co. of New York; sale included business of Rogers & Wood Co., silver-plating. *July.* Norwood Engineering Co. built addition to machine shop. *August.* Mt. Tom Sulphite Pulp Co. shut down for a week owing to temporary closing of Holyoke Paper mills. *September.* Rogers & Wood Co., cutlery, began addition, 74 x 40 feet, one story, for forge room.

North Andover. In February, M. T. Stevens & Sons' Co., woollen goods, organized; authorized capital $600,000. *June.* Massachusetts Bleach & Dye Works destroyed by fire.

North Attleborough. In January, F. M. Whiting & Co., shell and horn goods, shut down for 2 weeks. —— James Totten, old-time manufacturing jeweler, died. *March.* Factory of Sturdy's Sons, jewelry, destroyed by fire; W. N. Fisher & Co. and E. E. Thomas & Co., in the same building, lost heavily. *April.* W. S. Blackinton & Co. started up after 2 weeks' shutdown. —— E. I. Franklin & Co., jewelry, shut down one week for repairs.

Northborough. In January, Northborough Woollen Mills damaged by fire. *February.* Woodside Mills, woollen goods, started up after shutdown of seven months; James Dorr, of Jefferson, Mass., to run the property.

Northbridge. In March, Whitin Machine Works equipped the Whitman Cotton Mills, New Bedford, with 40 new combing machines.

North Brookfield. In January, shoe shop of H. H. Brown closed for invoice. *February.* E. & A. H. Batcheller Co., shoes, added 4 new lasting machines and expect to put in more; also added manufacture of tree feet to product. *March.* Fire damaged last factory of E. & A. H. Batcheller Co. *June.* E. & A. H. Batcheller closed factory for invoicing.

Northfield. In January, fire destroyed cabinet-maker's shop of Isaiah Moody. *September.* Fire damaged factory owned by Gilbert H. Mann and occupied by Hamilton & Son for wood turning.

Norwell. In March, factory occupied by Ridge Hill Shoe Co. destroyed by fire. *April.* George W. H. Litchfield, retired shoe manufacturer, died.

Norwood. In May, stockholders of Lyman Smith's Sons Co. voted to adopt name of Winslow Bros. & Smith Co. for the manufacture of sheepskins; new organization included firms of Winslow Bros. and Lyman Smith's Sons who for nearly 50 years manufactured sheep leather in this town; authorized and paid in capital $350,000.

Orange. In March, Orange Shirt Co. closed factory for an indefinite time; plant was built in 1895 by the citizens and turned over to company under terms of contract. *April.* New Home Sewing Machine Co. dedicated new factory with dance and collation; building is of brick, 3 stories, 200 x 98 feet. —— James H. Haley began erection of brass foundry. *May.* Grout Bros. began work on foundation for addition to automobile fac-

tory. *July.* New Home Sewing Machine Co. shut down for 10 days. *August.* Orange Shirt Co. stockholders voted to sell property of company to F. M. Becker; in September, F. M. Becker began manufacturing.

Oxford. In February, Andrew Howarth & Son, woollen goods, shut down owing to accident to boiler. *April.* John Rich, of Millbury, purchased water privilege at Gates place, put in new flume and made other improvements.

Palmer. In January, Boston Duck Co. added new twisting, carding, and spinning machinery, also new water-wheels; later, added napping machine. — Holden & Fuller, woollen goods, shut down for a week on account of lack of orders.

Peabody. In February, Danvers Bleachery & Dye Works added making of sheets and pillowcases for Naumkeag Steam Cotton Co. to product. *April.* Furbush & Co. began manufacture of grain leather in finishing factory of John A. Lord. — Murr Leather Co. purchased building known as the Brown wool shop to be used as drying department. *May.* Christopher Carter hired William P. Clark factory for manufacture of morocco; factory formerly occupied by him in Salem was burned. — The Annable factory started up to produce chrome tanned sheepskins. — Monahan & Robinson leased old Enos factory for the manufacture of a patent Babbitt metal. *June.* Vaughn Machine Co. incorporated; authorized capital $2,000,000; business of the Sawyer Leather Measuring Machinery Co. purchased by new firm who will manufacture and control sale of same. Vaughn Machine Co. was established many years ago by father of George, Ira, and Charles Vaughn, who invented the first putting-out machine. *July.* F. Osborne Co., leather manufacturers, started up after shutdown of 9 months. — National Calfskin Co. erected new frame storehouse, 2 stories above basement, flat roof, with granolithic floor in basement. — A. B. Clark built addition, 85 x 45 feet, to morocco factory. *August.* Calvin J. Larrabee, leather manufacturer, died, aged 37 years.

Pepperell. In January, Gregory, Shaw, & Co., shoe manufacturers, dissolved; Gregory-Shaw Co. continued; business was originally established in 1815, incorporated in 1900. *February.* Flagg Manufacturing Co., musical instruments, moved part of stock and machinery to East Boston.

PITTSFIELD. In January, Eaton-Hurlbut Stationery Co. shut down one day for repairs on boiler. — J. L. & T. D. Peck Manufacturing Co., woollen goods, began addition to storehouse, 97 x 40 feet. — Stevenson Manufacturing Co. reorganized with capital of $30,000, to manufacture reels, spools, and bobbins. — Pontoosuc Woollen Manufacturing Co. shut down for one week, owing to dull trade. — Two mills of J. L. & T. D. Peck Manufacturing Co. started up after shutdown of 2 weeks. — Pittsfield Shoe Stock Co., organized about a year ago, added new machinery and increased force. — Andriesse & Hanssen leased rooms in Ryan block for manufacturing cigars. — Slight damage done by fire at plant of Helliwell & Co., woollen goods.

February. Weaving departments of W. C. Tillotson shut down 3 days to allow carding and spinning rooms to get stock ahead. — Directors of Stanley Electric Co. voted to increase capital stock $250,000. — Part of the business of the Stevenson Manufacturing Co. consolidated with that of the Wrentham Shuttle Co., of Wrentham.

March. Pontoosuc Woollen Manufacturing Co. shut down part of mill 3 days owing to break in shafting. — Smith Shirt Co. started up after shutdown of 2 weeks. — O. W. Robbins Shoe Co. shut down for indefinite time. — Pittsfield Carriage Co. made alterations and improvements including placing of large elevator and excavation for cellar wall under shops, 40 x 60 feet.

April. New company formed with capital stock of $25,000, to manufacture crackers. — Eaton-Hurlbut Paper Co. began addition to factory, 50 x 100 feet, 3 stories, brick, to cost $25,000. — Andriesse & Hanssen, cigars, increased capacity.

May. W. E. Tillotson Manufacturing Co., woollen goods, incorporated with $175,000 capital, and assumed business of W. E. Tillotson. — The Pittsfield Shoe Stock Co. shut down for inventory before moving; resumed operations in July. — W. E. Tillotson Mfg. Co., worsted goods, added 10 new looms. — Government paper mill at Coltsville shut down for a month. — S. N. & C. Russell Manufacturing Co., woollen goods, shut down for one week during repairs.

June. Helliwell & Co. shut down for repairs to engine and machinery. — Andriesse & Hanssen, cigar manufacturers, closed factory and took positions in Albany, N. Y. — Thomas Crane began manufacture of rugs.

July. A. H. Rice & Co., silk goods, started up after shutdown of several days for inventory. —— Stanley Electric Manufacturing Co. erected new pattern shop and gate-house. *September.* Morewood Ice Co. began new structure, 100 x 50 feet, 40 feet high.

Plymouth. In April, George Mabbett & Sons built addition to woollen mill and installed new machinery. *September.* Fire destroyed warehouse of Plymouth Cordage Co.

Randolph. In February, J. B. Lewis Co., of Brockton, shoes, purchased new Tileston shoe factory and moved machinery from Brockton.

Reading. In January, directors of Reading Rubber Manufacturing Co. voted to increase capital stock 50 per cent; brick addition built, 350 x 60 feet, one story, for manufacture of imitation upholsterers' leather. *April.* Ford & Chase, shoes, dissolved; E. W. Ford succeeded; in June, removed plant to Salem and increased product.

Revere. In July, spice mill of D. & L. Slade Co. destroyed by fire; mill was built 50 years ago.

Rockland. In January, Hurley Bros., who retired from firm of N. R. Packard & Co., Brockton, purchased Bates factory and began manufacture of shoes. *February.* Gideon Studley's new box mill completed; 2 stories, 90 x 55 feet, with basement 66 x 55 feet, L 33 x 34 feet, cost $35,000. *April.* Kuhn Machine Co. purchased factory formerly occupied by Jason Smith; brick stack to be erected and 15-horse-power engine and 15-horse-power boiler installed. *May.* Inkley & Johnson moved heel business to Brockton. —— Rice & Hutchins, shoes, began negotiations for 50 acres of land for erection of new factory and tannery. Land already purchased for erection of 25 houses.

SALEM. In January, Naumkeag Steam Cotton Co. installed 150-horse-power boiler. —— E. S. Woodbury & Co., shoes, erected large factory for their own use. *February.* Goodwin & Carroll, machinists, succeeded by Goodwin & Lincoln. —— B. J. Mulligan built addition to morocco factory. —— Fires for the month: Heffernan & Son, shoes; Henry D. Lefavour, shoes; the latter began erection of factory, 4 stories, accommodating several hundred workmen, to take place of factory burned. *March.* Fire damaged building occupied by Peter F. Marrin, stiffening shop, and A. W. Copp, box manufacturer. *April.* Fire destroyed mill of N. P. Gifford, building materials, and damaged box factory of W. A. Irving. *May.* Eagle Iron Foundry damaged by fire. —— P. Creedon & Co. purchased currying shop of George F. Putnam tannery; in June, E. W. Ford, successor to Ford & Chase, shoes, moved business from Reading to occupy it. *July.* Daniel C. Haskell tannery property purchased by John Bradley, of Salem Shoe Stock Co. —— Moore Leather Machine Co. Incorporated, began manufacturing. *August.* B. J. Mulligan factory, shoe stock, started up after shutdown of a month. —— Eagle Iron Foundry began erection of addition, 40 x 42 feet.

Saugus. In January, Saugus Woollen Manufacturing Co. organized; authorized capital $70,000. —— F. Scott & Sons, woollen goods, added new looms.

Shelburne. In March, American Metallic Casket Co. tore down part of the old Gardner cutlery plant in order to build addition.

Shirley. In January, Samson Cordage Works installed dynamo and other electric power machinery in new building on site of the old Fredonian mill.

Somerset. In January, Somerset Stove Foundry Co. started up after shutdown of 3 weeks for repairs; in February, shut down 2 weeks for stock taking; in May, shut down for indefinite time, resuming in June; in July, shut down for 10 days. *February.* Fire damaged building of Mount Hope Iron Co.; in April, nail factory shut down for repairs to overhead shafting; in June, company shut down for one week; in July, nail factory run 5 days a week to allow plate department to get ahead. *September.* Somerset Stove Foundry Co. started up after shutdown of 2 weeks.

SOMERVILLE. In July, American Tube Works began erection of brick boiler house, 1 story, 54 x 41 feet. *September.* American Tube Works began erection of 2-story brick and stone building, steel frame, 41 x 58 feet.

Southbridge. In March, Hamilton Woollen Co. added 100 looms in spinning room.

South Hadley. In March, plant of Glasgow Co., cotton goods, started up after shut-down of 4 years to run off stock; in May, shut down. *May.* Finishing room of Hampshire Paper Co. shut down for few days.

Southwick. In May, fire destroyed sawmill and seven other buildings owned by Elbridge F. Dewey.

Spencer. In January, fire damaged No. I mill of Spencer Wire Co. —— Cutting department of Isaac Prouty & Co. Incorporated, shoes, shut down for stock taking, which was done in each department as fast as work was finished. —— A. Drury, retired shoe manufacturer, died; he was at one time engaged with George Livermore, later with Frank E. Dunston, of firm of E. Jones & Co., and retired in 1883. —— Spencer Textile Co., woollen goods, put additional looms in operation. *March.* No. 5 mill of Spencer Wire Co. shut down on account of broken water-wheel. *April.* Dufton Bros., woollen goods, shut down one day owing to high water in finishing and boiler rooms. *July.* E. Jones & Co. shut down shoe factory owing to accident to heater. *September.* Cutters at shoe factory of Isaac Prouty & Co. Incorporated began work after a week's vacation.

SPRINGFIELD. In January, Meyer Thread Co. removed to Salem, N. H.

February. Franklin Nichols and John A. Nichols retired from Taylor, Nichols, & Co., stationery manufacturers; John A. Murphy, former partner, and George H. Souther succeeded, under style of Murphy & Souther. —— James S. Blair, ex-president and founder of Blair Manufacturing Co., agricultural implements, died, aged 82 years. —— William P. Derby, retired manufacturer webbing and narrow fabrics, died, aged 62 years. —— O. W. Bullock & Co., artisans' tools, secured option on lease of floor space in building owned and formerly occupied by Cheney Bigelow Wire Works. —— Cheney Bigelow Wire Works built brick addition to factory, 2 stories, 44 x 148 feet; the looms to be installed will each rest on a stone foundation, independent of floor of building.

March. Springfield Economy Rug Co. began manufacturing rugs from old carpets by use of company's patented machine.

May. American Flax Co. moved from Meredith, N. H., to Indian Orchard, and began manufacturing. —— Indian Orchard Co., cotton yarn and thread, shut down half day owing to accident to governor. —— Fire damaged plant of Springfield Lumber Co.

June. Chapman Valve Manufacturing Co. built addition to plant, one story, 50 x 150 feet, of steel; brass finishing department shut down for one day owing to accident to main belt. —— Bemis & Call, hardware and tools, began erection of new mill, 146 x 61 feet; first section will be continuation of present No. 2 mill and 3 stories high, second section to be 2 stories, and 114 feet long; old mill will be used for storehouse. —— Springfield Armory shops shut down 15 days for annual repairs and inventory.

July. Atlas Wire Works organized for manufacture of wire goods. —— Knox Automobile Co. organized with capital of $60,000. —— Chapman Valve Manufacturing Co. began work on addition to main building, 40 x 21 feet, one story, to be used for a japan-room. —— J. W. Steere & Sons, incorporated with capital of $50,000, purchased plant and organ business of J. W. Steere & Son.

August. Cross & Church, proprietors of Century Manufacturing Co., clothing, increased capacity.

September. Springfield Economy Rug Co. moved into rooms vacated by Planet Manufacturing Co. —— Birnie Paper Co. reorganized as stock company; authorized capital $600,000; later, began erection of mill addition, brick, 3 stories, 50 x 75 feet. —— R. H. Long of R. H. Long Shoe Manufacturing Co. leased J. E. Bacon factory and will operate same. —— Templeton Press, newspaper and job printing, bought by Albert C. S. Raymond who will manage it in connection with his plant at Greenfield.

Sterling. In January, Marcus & Co., owners of the Edwin Stevenson mill at Pratt's Junction, hired Fitch chair shop for finishing room; to be known as New England Chair Co.

Stoneham. In February, T. H. Jones Shoe Co. increased capacity by taking the space formerly occupied by Blaisdell Clothing Co. *April.* George Longmore began manufacturing heels. —— Business of H. B. Tucker, shoe stock, transferred to H. B. Tucker Co., incorporated under Massachusetts laws.

Stoughton. In January, Fitzpatrick Shoe Co., Chas. E. Dwyer president, began manufacturing. *March.* French & Ward, knit goods, shut down for indefinite time owing to dull trade. *June.* Upham Bros. & Co., shoes, purchased Charles Stratton & Son's factory. —— Stockholders of Wales French Shoe Co. voted to go out of business and closed factory. *August.* Fire damaged waste house of Stoughton Mills, woollen goods and yarn.

Sutton. In June, Batcheller & Nason, slippers, ran out stock and closed factory; shop was opened in 1881 and most of the work done by hand.

Swansea. In July, Lorenzo P. Sturtevant installed additional machinery for manufacture of jewelry in second floor of the D. R. Child & Co. establishment.

Swampscott. In March, Swampscott Gelatine Co. incorporated; authorized capital $5,100.

TAUNTON. In January, Lewis & Co., candy manufacturers, moved from Philadelphia to factory on Main Street. —— Corr Manufacturing Co. added 50 looms and installed new boiler. —— John C. Rhodes & Co., eyelets, purchased plant and business of John D. Robinson.

February. Cohannet Mills, cotton yarn and thread, shut down 4 weeks to install new steam plant at No. 1 and 2 mills. —— Eldridge & Co. made extensive improvements at coffin-plate works. —— Robinson Iron Works sold to Plymouth Mills; works were shut down about 10 years ago. —— North Dighton Co-operative Stove Co. shut down for the holiday; in March, shut down for a week; in June, shut down for several weeks.

March. French & Winslow, brick, started up after shutdown of about 2 months.

April. William O'Brien, formerly spinning ring manufacturer, died. —— New company formed to manufacture brick; 28 acres of land purchased from A. B. Staples, who retired from brick business some time since; in June, made first lot of 32,000 brick. —— Whittenton Manufacturing Co., cotton goods, shut down for 2 weeks to curtail production; later, began erection of new storehouse. —— Fire destroyed plant of Taunton Dye Works; in June, William Lovering began rebuilding.

May. Reed & Barton shut down silver department for stock taking. —— Taunton Locomotive Manufacturing Co. closed to take account of stock. —— Fire caused slight damage at mill of Whittenton Manufacturing Co.

June. Mason Machine Co. installed new molding machines. —— Fire destroyed building owned by Francis S. Babbitt and occupied by Cohannet Silver Plate Co., Henry D. Moulton, and The Atlantic Refrigerating Machine Co.

July. Elizabeth Poole Mills, cotton goods, shut down for about a month to curtail production. —— Whittenton Pearl Jewelry Co. formed, and began erection of factory, 37 x 60 feet. —— Fire damaged Canoe River mill, cotton yarn and thread. —— Whittenton Manufacturing Co. started up after shutdown of 10 days. —— Poole Silver Co. started up after shutdown for repairs.

August. North Dighton Co-operative Stove Co. started up after shutdown. —— Elizabeth Poole Mills started up after shutdown of over a month.

September. Taunton Gas Co. began operation of plant at Weir and will continue old plant until new one is running satisfactorily. —— Taunton Automobile Co. incorporated; authorized capital $200,000. —— Fire damaged foundry of Taunton Locomotive Manufacturing Co. —— Management of new knitting mill purchased Fish estate for erection of new factory.

Uxbridge. In February, Calumet Woollen Co. shut down owing to accident to waterwheel. *May.* Albert E. Davis began manufacture of cotton and woollen yarns and shoddies. *July.* Calumet Woollen Co. laid foundation for large force pump. *September.* Mill property formerly owned and operated by R. C. Taft of Rhode Island and for many years owned and operated by C. C. Capron, purchased by C. W. Scott and J. R. Scott; Whitinsville Savings Bank was grantor, having purchased property about a year ago at foreclosure sale; new owners took possession at once.

Wakefield. In April, Harvard Knitting Mill began work on addition, 3 stories, 160 x 45 feet. *July.* L. B. Evans & Son, shoes, began addition to factory, wood, 4 stories, 40 x 60 feet. —— Smith & Anthony Co. started up after usual summer shutdown.

Wales. In January, Golden Rod Woollen Mills installed new napper.

Walpole. In January, Walpole Card Clothing Co. installed electric light plant; in April, added new machinery.

WALTHAM. In February, stock, machinery, etc., of Whitney & Wood Co., aluminum ware, purchased by Pittsburg Reduction Co., Pittsburgh, Pa., who will move plant to that city. —— Boston Manufacturing Co., cotton goods, shut down a week for repairs. —— Alfred Tomlin began erection of new factory for manufacture of knit goods. *April.* Fire destroyed planing mill of Buttrick Lumber Co. —— Philadelphia Watch Case Co. purchased plants of the United States Watch Co. and the Columbia Watch Co.; additional buildings will be erected. *May.* Boston Manufacturing Co. shut down for indefinite period, owing to dull market. *July.* Buttrick Lumber Co. began new sawmill to replace one destroyed by fire.

Ware. In February, Otis Co., cotton goods, shut down No. 3 mill for repairs on engine. —— G. H. Gilbert Manufacturing Co., woollen goods, shut down for part of day to make repairs on main gear; in March, installed 23 new worsted spinning frames and 12 new high speed looms. *July.* C. A. Stevens & Co., woollen goods, installed electric dynamo for lighting purposes.

Warren. In January, Potter & Collamore erected addition to machine shop. —— Sayles & Jenks Manufacturing Co., woollen goods, closed owing to condition of market. —— Thorndike Co., cotton goods, installed napping machine; No. 3 mill shut down owing to accident to water-wheel. *February.* Torkelson Manufacturing Co., arms and ammunition, shut down for a day to make repairs on main shaft. —— Fire damaged No. 4 mill of Thorndike Co.; in March, cross compound engine of 600-horse-power installed at No. 1 mill. *May.* George F. Blake Manufacturing Co., machines and machinery, moved plant to East Cambridge. *July.* Warren Steam Pump Co. increased capacity by renting 3-story wooden building owned by George C. Bridges.

Watertown. Player Manufacturing Co. incorporated under Maine laws, with capital of $500,000, to manufacture and sell musical instruments. *April.* Walker & Pratt Manufacturing Co. began work on foundation for an addition 100 x 110 feet, one story.

Wayland. In May, O. Ewing began manufacture of shoes in Cochituate. *June.* Daniel Griffin began manufacturing shoes.

Webster. In March, Henry Hale Stevens died, aged 83 years; he founded Stevens Linen Works in 1865, which were incorporated in 1867 under laws of Massachusetts, and retired in 1877. *April.* Chace Mills, woollen goods, installed 32 new looms. *September.* H. N. Slater Manufacturing Co., cambric works, shut down 2 weeks, owing to large amount of goods on hand.

Westborough. In January, Lucius R. Bates, manufacturer of straw goods, died, aged 73 years. *April.* George B. Brigham & Son, shoes, closed shop for a week, owing to lack of orders and change to summer grade of goods.

West Bridgewater. In March, Trolley Shoe Polish Co. began manufacturing.

West Brookfield. In March, Olmstead Quaboag Corset Co. began work on new extension, 36 x 18 feet. *April.* Brigham condensed milk factory started up after shutdown caused by strike of milk producers. *June.* Standard Fishing-rod Co. shut down for about 4 weeks to make alterations.

Westfield. In January, William Warren Thread Co. began erection of 3-story brick addition to mill, 50 x 160 feet. —— Noble Bros. & Co. purchased what is known as Johnson organ factory for tobacco warehouse. *February.* Henry A. Parsons, retired carriage manufacturer, died, aged 68 years. *March.* H. B. Smith Co., machines, built addition to storehouse, increased capacity of machine room, and installed new boiler. —— Cressy Thread Co. leased factory formerly occupied by New England Whip Co. and installed machinery for manufacture of thread. *April.* American Cigar Co. closed factory; company was established in 1873. —— American Bicycle Co. awarded contract for addition to Lozier plant; to be of brick, 210 x 50 feet, 4 stories, with sub-basement, and of heavy mill construction, to cost about $35,000; completed in June. *June.* H. B. Smith Co. let contract for addition to heating apparatus plant. *July.* Joseph W. Ellis, cigar manufacturer, died, aged 62 years. —— Fire damaged building occupied by Independent Whip

Co., Palmer & Upson, whip buttons, and Vitrified Wheel Co. *August.* The Horsewhip Co., a new corporation organized under Massachusetts laws, occupied building of Bay State Whip Co. —— Fire damaged plant of Beckwith Bros. & Co.; firm resumed work in few days. —— Packard Whip Mount Works built addition of one story. —— Jeremiah H. Connors, cigar manufacturer, died, aged 45 years.

West Springfield. In January, Mittineague Paper Co. began erection of addition to plant, brick, 150 x 50 feet, for the manufacture of goods now imported, particularly photograph and artists' paper; in September, installed machinery in new mill.

West Stockbridge. In February, West Stockbridge Lime Co. organized; authorized capital $15,000.

Westport. In July, fire, caused by lightning, destroyed storehouse of Westport Manufacturing Co., cotton yarn and thread.

Weymouth. In January, Aaron Prince Nash, retired shoe manufacturer, died, aged 90 years. *June.* M. C. Dizer & Co. absorbed Gordon-Kiley Shoe Co. *September.* Davis B. Clapp, shoe manufacturer, died, aged 24 years.

Whitman. In January, Jenkins & Waterman began manufacturing box toes in Jenkins factory. —— Work on foundation for Bliss factory begun. *April.* American Linen Fibre Co., with capital of $2,000,000, bought plant of Dunbar, Hobart, & Whidden, to manufacture absorbent linen, linen paper, and fireproof wood and electric insulation. *June.* Jenkins & Waterman began work on addition to factory. —— Atwood Bros. began excavation for addition to box factory, 2 stories, 45 x 100 feet.

Wilbraham. In April, fire damaged storeroom of Collins Manufacturing Co., paper.

Williamsburg. In April, fire destroyed sawmill of G. M. Bradford. *May.* Haydenville Co. equipped polishing machines with blowers.

Williamstown. In February, Boston Finishing Works completed new addition for dyehouse, and old dyehouse turned into calender room; in March, added new machinery in bleaching department; in April, shut down on account of muddy water. *May.* Beltine Manufacturing Co. formed to make belt dressing.

WOBURN. In February, P. Calnan & Co., shoe stock, discontinued; no successor. *April.* F. E. Cottle purchased old Loring tannery, which was partially destroyed by explosion few years ago, and remodeled it; erected 3 new buildings: 135 x 32 feet, 3 stories; 145 x 44 feet, 1 story; and 65 x 60 feet, 2 stories; work to start in July, employing 125 to 150 men and tanning 400 hides daily.

WORCESTER. In January, stock and machinery of R. B. Edwards, spindles, sold for benefit of creditors. —— Bickford & Sweet, slippers, succeeded by E. A. Bickford & Sweet. —— The Independent Pharmaceutical Co. leased part of A. H. Hammond factory for manufacture of physicians' and surgeons' supplies; company purchased business of Peake Manufacturing Co., of Boston, and combined it with the business at Worcester. —— Southgate Woollen Co. built additional story to plant. —— Globe Corset Co. purchased the building which they occupied; company was formed in 1883. —— John P. Marble, retired woollen manufacturer, died, aged 99 years. —— Worcester Corset Co. incorporated; authorized capital $400,000. —— Gleaner Brush Co. purchased factory of Louis Bourneuf & Co. in Swampscott and moved business to Worcester. —— Samuel Ayres, wire goods manufacturer, died, aged 82 years; he began weaving wire in 1845, starting the business now carried on by the National Wire Goods Co.; he retired about 12 years ago.

February. Queensbury Mills Co., woollen goods, incorporated; authorized capital $100,000. —— Locomobile Company of America shipped machinery to factory at Bridgeport, Ct. —— William H. Burns Co., clothing, increased capital stock from $150,000 to $250,000. —— Natural Food Co., successors to Shredded Wheat Co., built new factory at Niagara Falls, and advertising department removed from Worcester. —— Morgan Spring Co. bought all staple and tack machines used by Washburn & Moen department of American Steel & Wire Co., and moved them to plant at Barber's crossing.

March. Walter B. Clark purchased machinery and stock of Parisian Wrapper Manufacturing Co. —— Bent & Evans began manufacturing boots and shoes in part of Walker

& Brown's factory. — Charles C. Houghton, shoe manufacturer, died; he began manufacturing in 1853, and retired in 1893. — Worcester Novelty Co. began manufacturing wire goods and novelties. — United States Mobile & Power Co. established in plant formerly occupied by Warren Manufacturing Co.; building is of brick, 4 stories, and contains 8,000 square feet. — Wachusett Mills Corporation increased capital stock from $15,000 to $50,000; company purchased Sargent building, erected in 1866, and remodeled it for manufacturing fancy cotton goods. — Peter Wood Dyeing Co. built large addition to dyehouse. — Stock of Claflin Dental Co. sold to W. H. DeLon.

April. Parisian Wrapper Manufacturing Co. incorporated with capital of $25,000. — United States Steel Co. started up plant at South Worcester. — Litchfield Cushion Heel Co. incorporated; authorized capital $100,000. — Star Hammock Co. began manufacturing. — Worcester Manufacturing Co., incorporated, bought patent rights of the Burnham shutter worker; capital stock $150,000. — Solomon Kunitz, formerly of the Parisian Wrapper Manufacturing Co., organized new company to manufacture similar line of goods.

June. Plant and business of Worcester Carpet Co. purchased by M. J. Whittall. — Parker Wire Goods Co. incorporated under Massachusetts laws; authorized capital $10,000; to manufacture wire goods specialties. — Witherby, Rugg, & Richardson, woodworking machinery, succeeded by Witherby, Rugg, & Richardson Company. — Browning & Elliott bought business of H. W. Beach and began manufacturing heels. — Fire damaged building occupied by John J. Griffin, manufacturer of mattresses. — Thomas C. Orndorff succeeded by Anson Mills Woven Belt Cartridge Co.

July. Fire destroyed ice houses of Walker Ice Co. — Charles J. Goessman erected factory for manufacture of patented waterproof paper. — Fire damaged factory of Hatch & Barnes, builders' finish. — Loring Coes & Co. awarded contract for new wrench factory, 100 x 180 feet, 3 stories, brick, to cost about $25,000.

August. Crompton & Knowles shut down loom works for annual 10 days' vacation. — Star Foundry shut down for 10 days. — W. E. Oakley & Son, brass founders, sold to Kindred & Taylor.

September. Plant of Worcester Carpet Co. formally transferred to Mathew J. Whittall, who purchased property in June, and will continue to manufacture the same line of goods.

THE STATE. As in past years, the preceding Chronology has been prepared from information supplied by manufacturers, and from other sources. It includes the more important events affecting the conduct of industrial enterprises of the Commonwealth. In the following summary will be found a statement of the principal industrial events, arranged by subjects and industries. The proper method of reading the table is as follows: During the nine months ending September 30, 1901, there were 109 instances of new firms or industries established in the several cities or towns; of these, 37 were established to manufacture boots and shoes; 3, carriages and wagons; 5, leather; 7, machines and machinery; 9, metals and metallic goods, etc. There were 78 new buildings constructed during the nine months; 4 for firms manufacturing artisans' tools; 10 for firms or corporations making boots and shoes; 7, cotton goods; 10, machines and machinery, etc. Other lines may be read in a similar manner.

Classification of Subjects and Industries.	Number	Classification of Subjects and Industries.	Number
New Establishments, etc.	109	**New Establishments, etc.** – Con.	
Boots and shoes,	37	Flax, hemp, and jute goods,	1
Brick, tiles, and sewer pipe,	1	Food preparations,	4
Brooms, brushes, and mops,	1	Furniture,	2
Burial cases, caskets, coffins, etc.,	1	Hosiery and knit goods,	1
Carpetings,	2	Ivory, bone, shell, and horn goods, etc.,	1
Carriages and wagons,	3	Jewelry,	1
Cement, kaolin, lime, and plaster,	1	Leather,	5
Clothing,	2	Lumber,	1
Cordage and twine,	2	Machines and machinery,	7
Cotton goods,	2	Metals and metallic goods,	9
Electrical apparatus and appliances,	2	Models, lasts, and patterns,	1

Classification of Subjects and Industries.	Number
New Establishments, etc.—Con.	
Paper,	3
Polishes and dressing,	5
Print works, dye works, and bleacheries,	1
Railroad construction and equipment,	1
Rubber and elastic goods,	2
Scientific instruments and appliances,	1
Stone (quarried),	1
Tallow, candles, soap, and grease,	1
Tobacco, snuff, and cigars,	3
Toys and games (children's),	1
Woollen goods,	3
Buildings constructed during the Year.	78
Artisans' tools,	4
Bicycles, tricycles, etc.,	1
Boots and shoes,	10
Boxes, barrels, kegs, etc.,	3
Carriages and wagons,	1
Cooking, lighting, and heating apparatus,	1
Cotton goods,	7
Electrical apparatus and appliances,	1
Flax, hemp, and jute goods,	2
Food preparations,	1
Hose: rubber, linen, etc.,	1
Hosiery and knit goods,	4
Ivory, bone, shell, and horn goods, etc.,	2
Leather,	4
Machines and machinery,	10
Metals and metallic goods,	6
Models, lasts, and patterns,	1
Paper,	6
Print works, dye works, and bleacheries,	4
Railroad construction and equipment,	1
Rubber and elastic goods,	1
Silk and silk goods,	1
Woollen goods,	3
Worsted goods,	3
Machinery added to Plants.	112
Boots and shoes,	15
Boxes, barrels, kegs, etc.,	1
Cotton goods,	52

Classification of Subjects and Industries.	Number
Machinery added to Plants—Con.	
Electrical apparatus and appliances,	1
Jewelry,	1
Leather goods,	1
Machines and machinery,	6
Metals and metallic goods,	1
Models, lasts, and patterns,	3
Paper,	4
Print works, dye works, and bleacheries,	1
Rubber and elastic goods,	1
Wooden goods,	1
Woollen goods,	18
Worsted goods,	6
Other Additions to Plants.	63
Artisans' tools,	2
Boots and shoes,	12
Brick, tiles, and sewer pipe,	1
Burial cases, caskets, coffins, etc.,	1
Carpetings,	1
Carriages and wagons,	1
Clothing,	1
Cordage and twine,	1
Cotton goods,	6
Hosiery and knit goods,	2
Leather,	3
Lumber,	1
Machines and machinery,	7
Metals and metallic goods,	4
Models, lasts, and patterns,	2
Musical instruments and materials,	1
Paper,	2
Print works, dye works, and bleacheries,	4
Shipbuilding,	1
Tobacco, snuff, and cigars,	1
Woollen goods,	7
Worsted goods,	2
Addition of New Class of Product.	9
Boots and shoes,	2
Brick, tiles, and sewer pipe,	1
Carriages and wagons,	1
Machines and machinery,	1
Metals and metallic goods,	2
Models, lasts, and patterns,	1
Print works, dye works, and bleacheries,	1

Classification of Subjects and Industries.	Number
Rebuilding of Burned Factories, etc.	7
Cotton goods,	2
Lumber,	1
Print works, dye works, and bleacheries,	1
Rubber and elastic goods,	1
Woollen goods,	2
Removals to New or Larger Quarters.	21
Arms and ammunition,	1
Artisans' tools,	1
Boots and shoes,	16
Gas,	1
Metals and metallic goods,	1
Tobacco, snuff, and cigars,	1
Resumption of Business after Protracted Shutdowns.	8
Boots and shoes,	1
Carriages and wagons,	1
Cotton goods,	3
Metals and metallic goods,	1
Woollen goods,	1
Worsted goods,	1
Increased Capacity of Plants.	33
Bicycles, tricycles, etc.,	1
Boots and shoes,	20
Clothing,	1
Cotton goods,	1
Jewelry,	1
Machines and machinery,	1
Metals and metallic goods,	1
Models, lasts, and patterns,	1
Rubber and elastic goods,	1
Tobacco, snuff, and cigars,	1
Whips, lashes, and stocks,	1
Woollen goods,	3
Changes from Private Firms to Corporations.	15
Artisans' tools,	1
Boots and shoes,	5
Carriages and wagons,	1
Clothing,	2
Machines and machinery,	2
Musical instruments and materials,	1
Paper,	1
Woollen goods,	2

Classification of Subjects and Industries.	Number
Changes in Firms, Firm Names, etc.	39
Arms and ammunition,	1
Boots and shoes,	27
Clothing,	2
Leather,	2
Machines and machinery,	2
Metals and metallic goods,	1
Models, lasts, and patterns,	1
Paper,	1
Stone (quarried),	1
Tobacco, snuff, and cigars,	1
Changes in Character of Machinery.	7
Cotton goods,	7
Consolidations of Firms and Corporations.	4
Boots and shoes,	3
Carpetings,	1
Removals of Firms and Industries to Massachusetts from Other States.	2
Boots and shoes,	1
Flax, hemp, and jute goods,	1
Removals of Firms and Industries from Massachusetts to Other States.	9
Artisans' tools,	1
Boots and shoes,	2
Carriages and wagons,	1
Clocks and watches,	1
Cotton goods,	1
Metals and metallic goods,	1
Musical instruments and materials,	1
Paper,	1
Removals from one Town to another in Massachusetts.	11
Boots and shoes,	5
Brooms, brushes, and mops,	1
Ivory, bone, shell, and horn goods, etc.,	1
Leather,	1
Machines and machinery,	2
Musical instruments and materials,	1
Introduction of Electric Lighting and Power into Factories.	9
Cotton goods,	5
Leather,	1
Machines and machinery,	1
Paper,	1
Woollen goods,	1

Classification of Subjects and Industries.	Number
Suspensions for Vacations.	43
Arms and ammunition,	1
Artisans' tools,	1
Boots and shoes,	1
Cooking, lighting, and heating apparatus,	3
Cotton goods,	20
Furniture,	1
Machines and machinery,	4
Metals and metallic goods,	1
Silk and silk goods,	1
Toys and games (children's),	1
Woollen goods,	9
Suspensions for Stock Taking.	19
Boots and shoes,	12
Cooking, lighting, and heating apparatus,	2
Machines and machinery,	1
Metals and metallic goods,	1
Rubber and elastic goods,	1
Silk and silk goods,	1
Tobacco, snuff, and cigars,	1
Suspensions on account of Low Water.	4
Boxes, barrels, kegs, etc.,	1
Cotton goods,	2
Metals and metallic goods,	1
Suspensions on account of High Water.	40
Boots and shoes,	2
Building materials,	1
Clothing,	2
Cotton goods,	20
Leather,	1
Machines and machinery,	2
Paper,	5
Print works, dye works, and bleacheries,	3
Woollen goods,	3
Worsted goods,	1
Suspensions on account of Repairs and Improvements.	40
Arms and ammunition,	1
Boots and shoes,	2
Boxes, barrels, kegs, etc.,	2
Cooking, lighting, and heating apparatus,	1
Cotton goods,	8
Hosiery and knit goods,	1
Jewelry,	1

Classification of Subjects and Industries.	Number
Suspensions on account of Repairs and Improvements — Con.	
Leather,	2
Machines and machinery,	1
Metals and metallic goods,	2
Musical instruments and materials,	1
Paper,	6
Silk and silk goods,	1
Sporting and athletic goods,	1
Wooden goods,	1
Woollen goods,	8
Worsted goods,	1
Suspensions on account of Shortage of Materials.	4
Artisans' tools,	1
Cotton goods,	1
Metals and metallic goods,	1
Wooden goods,	1
Suspensions for Curtailment of Production.	104
Carpetings,	1
Cotton goods,	101
Hosiery and knit goods,	1
Print works, dye works, and bleacheries,	1
Suspensions on account of Accidents.	57
Arms and ammunition,	2
Boots and shoes,	10
Boxes, barrels, kegs, etc.,	2
Buttons and dress trimmings,	1
Carriages and wagons,	1
Clothing,	1
Cotton goods,	21
Emery and sand paper and cloth, etc.,	1
Machines and machinery,	2
Metals and metallic goods,	2
Paper,	1
Print works, dye works, and bleacheries,	1
Rubber and elastic goods,	1
Woollen goods,	11
Suspensions on account of Dull Trade.	13
Boots and shoes,	2
Clothing,	1
Cooking, lighting, and heating apparatus,	2
Cotton goods,	1

Classification of Subjects and Industries.	Number
Suspensions on account of Dull Trade — Con.	
Paper,	1
Woollen goods,	5
Worsted goods,	1
Suspensions (Temporary as to Duration).	54
Arms and ammunition,	1
Bicycles, tricycles, etc.,	1
Boots and shoes,	15
Boxes, barrels, kegs, etc.,	1
Clothing,	2
Cooking, lighting, and heating apparatus,	1
Cotton goods,	4
Emery and sand paper and cloth, etc.,	1
Food preparations,	1
Ivory, bone, shell, and horn goods, etc.,	1
Jewelry,	1
Lumber,	1
Metals and metallic goods,	3
Models, lasts, and patterns,	1
Paper,	5
Print works, dye works, and bleacheries,	2
Wooden goods,	1
Woollen goods,	7
Worsted goods,	5
Suspensions (Indefinite as to Duration).	17
Artisans' tools,	1
Bicycles, tricycles, etc.,	1
Brick, tiles, and sewer pipe,	1
Clothing,	1
Cotton goods,	2
Hosiery and knit goods,	1
Leather,	1
Lumber,	1
Machines and machinery,	1
Paper,	3
Tobacco, snuff, and cigars,	1
Woollen goods,	2
Worsted goods,	1
Suspensions (cause not given).	3
Buttons and dress trimmings,	1
Clothing,	1
Metals and metallic goods,	1

Classification of Subjects and Industries.	Number
Suspensions on account of Retirement from Business (No Successor).	12
Boots and shoes,	7
Leather,	1
Machines and machinery,	1
Models, lasts, and patterns,	1
Musical instruments and materials,	1
Tobacco, snuff, and cigars,	1
Sales of Plants in Whole or in Part.	66
Boots and shoes,	13
Brick, tiles, and sewer pipe,	1
Carpetings,	1
Carriages and wagons,	2
Cement, kaolin, lime, and plaster,	1
Clocks and watches,	3
Cordage and twine,	1
Cotton goods,	1
Food preparations,	4
Furniture,	2
Leather,	2
Lumber,	1
Machines and machinery,	7
Metals and metallic goods,	8
Models, lasts, and patterns,	1
Musical instruments and materials,	1
Oils and illuminating fluids,	1
Printing, publishing, and bookbinding,	1
Print works, dye works, and bleacheries,	1
Rubber and elastic goods,	2
Scientific instruments and appliances,	1
Straw and palm leaf goods,	1
Woollen goods,	8
Worsted goods,	2
Sales of Plants to Industrial Combinations.	8
Clocks and watches,	2
Cotton goods,	2
Machines and machinery,	2
Metals and metallic goods,	2
Fires during the Year.	108
Boots and shoes,	20
Boxes, barrels, kegs, etc.,	3
Brooms, brushes, and mops,	1
Building materials,	3
Carriages and wagons,	3

Classification of Subjects and Industries.	Number	Classification of Subjects and Industries.	Number
Fires during the Year — Con.		**Fires during the Year** — Con.	
Clothing,	1	Wooden goods,	6
Cordage and twine,	1	Woollen goods,	7
Cotton goods,	15		
Crayons, pencils, crucibles, etc.,	1	**Deaths of Manufacturers.**	53
Flax, hemp, and jute goods,	1	Boots and shoes,	17
Food preparations,	4	Carriages and wagons,	3
Furniture,	3	Cotton goods,	5
Glass,	1	Flax, hemp, and jute goods,	1
Ink, mucilage, and paste,	1	Ivory, bone, shell, and horn goods, etc.,	1
Jewelry,	1	Jewelry,	2
Leather,	2	Leather,	2
Lumber,	5	Liquors (malt),	1
Machines and machinery,	9	Machines and machinery,	2
Metals and metallic goods,	7	Metals and metallic goods,	4
Models, lasts, and patterns,	1	Musical instruments and materials,	1
Musical instruments and materials,	2	Paper,	3
Paper,	4	Print works, dye works, and bleacheries,	1
Print works, dye works, and bleacheries,	2	Straw and palm leaf goods,	2
Rubber and elastic goods,	2	Tobacco, snuff, and cigars,	4
Toys and games (children's),	1	Woollen goods,	4
Whips, lashes, and stocks,	1		

Corporations and Capital Stock.

In the following table, the number of new corporations formed during the first nine months of the year 1901 is shown, together with the amount of capital authorized by their charters; also, increases and decreases in capital stock, classified by industries. These figures include the private firms which, in 1901, changed from the individual form to the corporate form of management.

Subjects and Industries.	Number	Amounts
New Corporations.	44	$8,018,600
Artisans' tools,	1	75,000
Boots and shoes,	12	1,080,000
Carriages and wagons,	2	260,000
Chemical preparations (compounded),	1	1,000
Clothing,	2	425,000
Cotton goods,	2	615,000
Electrical apparatus and appliances,	1	20,000
Food preparations,	3	40,100
Furniture,	1	50,000
Hosiery and knit goods,	1	20,000
Machines and machinery,	6	3,555,000
Metals and metallic goods,	2	20,000
Musical instruments and materials,	2	550,000
Paper,	1	600,000
Print works, dye works, and bleacheries,	1	125,000
Stone,	1	200,000

Corporations and Capital Stock — Concluded.

Subjects and Industries.	Number	Amounts
New Corporations — Con.		
Whips, lashes, and stocks,	1	$30,000
Woollen goods,	4	352,500
Increases in Capital Stock.	11	$1,697,000
Clothing,	1	100,000
Cotton goods,	4	610,000
Electrical apparatus and appliances,	1	250,000
Glass,	1	10,000
Metals and metallic goods,	1	2,000
Print works, dye works, and bleacheries,	1	75,000
Rubber and elastic goods,	1	250,000
Shipbuilding,	1	400,000
Decreases in Capital Stock.	3	$104,500
Boots and shoes,	2	54,500
Print works, dye works, and bleacheries,	1	50,000

RECAPITULATION. 1900, 1901.

In the following table, we bring forward the subjects shown in the two preceding presentations in comparison with similar data contained in the Chronology for 1900:

Classification of Subjects.	Number of Establishments, etc.	
	1900 (12 months)	**1901** (9 months)
New establishments, etc.,	156	109
Buildings constructed during the year,	119	78
Machinery added to plants,	146	112
Other additions to plants,	136	63
Addition of new class of product to manufacture,	20	9
Rebuilding of burned factories, etc.,	15	7
Removals to new or larger quarters,	46	21
Resumption of business after protracted shutdowns,	5	8
Increased capacity of plants,	31	33
Changes from private firms to corporations,	23	15
Changes in firms, firm names, etc.,	77	39
Changes in character of product,	5	–
Changes in character of machinery,	11	7
Consolidations of firms and corporations,	6	4
Removals of firms and industries *to* Massachusetts from other States,	–	2
Removals of firms and industries *from* Massachusetts to other States,	15	9
Removals from one town to another in Massachusetts,	19	11
Introduction of electric lighting and power into factories, etc.,	9	9
Suspensions for vacations,	81	43
Suspensions for stock taking,	50	19
Suspensions on account of low water,	15	4

Recapitulation. 1900, 1901 — Concluded.

Classification of Subjects.	Number of Establishments, etc.	
	1900 (12 months)	1901 (9 months)
Suspensions on account of high water,	65	40
Suspensions on account of repairs and improvements,	80	40
Suspensions on account of shortage of materials,	5	4
Suspensions for curtailment of production,	70	104
Suspensions on account of accidents to machinery, etc.,	78	57
Suspensions on account of dull trade,	27	13
Suspensions (temporary as to duration),	111	54
Suspensions (indefinite as to duration),	17	17
Suspensions (cause not given),	59	3
Suspensions on account of retirement from business (no successor),	62	12
Sales of plants in whole or in part,	72	66
Sales of plants to industrial combinations,	55	8
Plants damaged by explosions,	6	–
Fires during the year,	185	108
Deaths of manufacturers,	120	53
New corporations,	48	44
Amount of authorized capital,	$10,535,500	$8,018,600
Increases in capital stock,	12	11
Amount of increase,	$1,938,000	$1,697,000
Decreases in capital stock,	2	3
Amount of decrease,	$750,000	$104,500
Net increase of capital stock,	$1,188,000	$1,592,500

STOCK PRICE QUOTATIONS.

In the following table are shown the highest and lowest price quotations for the 12 calendar months of 1900 and the first nine months of 1901, together with the amount of capital stock outstanding on January 1, 1901, and the par value of stock. The majority of the figures were compiled by Frank A. Ruggles of Boston.

Names of Companies.	Capital Stock, Jan. 1, 1901	Par Value of Stock	Stock Price Quotations			
			1900 (12 months)		1901 (9 months)	
			Highest	Lowest	Highest	Lowest
American Linen Co.,	$800,000	$100	105	85	*97	–
Am. Sugar Refinery Co.,	36,968,000	100	148⅝	96	152⅞	117
Am. Sugar Refinery Co. (pref.),	36,968,000	100	118	107	130	114
American Woollen Co.,	25,000,000	100	25¾	11¼	21⅞	14⅛
American Woollen Co. (pref.),	16,000,000	100	82¼	67	82½	70⅝
Appleton Co.,	450,000	100	107⅛	104½	124	117
Arkwright Mills,	450,000	100	90	85	87½	87½
Arlington Mills,	2,500,000	100	105¼	100	100⅛	100
Atlantic Mills,	1,000,000	100	67⅛	53½	62¼	50⅛
Barnaby Manufacturing Co.,	400,000	100	85	82½	95	75
Barnard Manufacturing Co.,	495,000	100	108	95	105½	97
Bigelow Carpet Co.,	4,020,000	100	95	80¾	98	83¾
Boott Cotton Mills,	1,200,000	1,000	817½	760	862½	800

* Only sale.

Stock Price Quotations — Continued.

Names of Companies.	Capital Stock, Jan. 1, 1901	Par Value of Stock	Stock Price Quotations			
			1900 (12 months)		1901 (9 months)	
			Highest	Lowest	Highest	Lowest
Border City Manufacturing Co.,	$1,000,000	$100	155	100	118	109½
Boston Belting Co.,	1,000,000	100	211⅝	200	215¾	210⅝
Boston Duck Co.,	350,000	700	–	–	*1,035	–
Boston Manufacturing Co.,	800,000	1,000	376	350	340	285
Chace Mills,	750,000	100	98	88½	93	90
Chicopee Manufacturing Co.,	1,000,000	100	95	87	90	75
Cornell Mills,	400,000	100	130	127½	127½	122½
Davol Mills,	400,000	100	110	100	102½	100
Dwight Manufacturing Co.,	1,200,000	500	1,020	980	1,037½	1,001¼
Everett Mills,	800,000	100	97½	95	96	94½
Flint Mills,	580,000	100	109	100	105	102
General Electric Co.,	24,699,900	100	198¾	121	269½	183½
Granite Mills,	1,000,000	100	125	110	127½	115
Grinnell M'f'g Corporation,	1,000,000	100	212	130	182¼	132¼
Hamilton Manufacturing Co.,	1,800,000	1,000	900	835	865	750
Hamilton Woollen Co.,	1,000,000	100	51	48	52	50¼
Hargraves Mills,	800,000	100	110	99½	106	101
King Philip Mills,	1,000,000	100	105	92	*115	–
Lancaster Mills,	1,200,000	400	450	344	352½	300
Laurel Lake Mills,	300,000	100	135	122½	127½	125
Lawrence Manufacturing Co.,	750,000	100	150½	125	150⅜	110½
Lowell Bleachery,	400,000	100	75	69	60	50
Lowell Hosiery Co.,	200,000	100	88½	84	*88	–
Lowell Machine Shops,	900,000	500	797½	777½	810	792½
Lyman Mills,	1,470,000	100	74	66¼	70¼	67½
Massachusetts Cotton Mills,	1,800,000	100	104¼	98	101⅜	96
Mechanics Mills,	750,000	100	93½	78	90	82
Merchants Manufacturing Co.,	800,000	100	110	92½	110	100
Merrimac Manufacturing Co.,	2,750,000	100	‡1,165	‡108	111¾	95¼
Middlesex Co.,	750,000	100	118¾	109	105	100
Narragansett Mills,	400,000	100	108	100	104	103
National Lead Co.,	14,905,400	100	†28¼	†15⅞	†25½	†15
National Lead Co. (pref.),	14,904,000	100	†106½	†83	†94⅛	†83
Naumkeag Steam Cotton Co.,	1,500,000	100	67½	60¼	63½	60
N. E. Cotton Yarn Co. (pref.),	5,000,000	100	103¼	96	99	90
Otis Co.,	800,000	1,000	*1,852½	–	*1,852½	–
Pacific Mills,	3,000,000	1,000	2,520	1,950	2,015	1,950
Osborn Mills,	750,000	100	112½	97½	98	90
Parker Mills,	800,000	100	108	100	106	103
Pocasset Manufacturing Co.,	600,000	100	120	110	*112	–
Richard Borden Manufacturing Co.,	800,000	100	133	112½	135	120
Saco & Pettee Machine Co.,	800,000	100	*95	–	106½	100¼
Sagamore Manufacturing Co.,	900,000	100	113	100	109	99
Seaconnet Mills,	600,000	100	105	90	96	95½
Shove Mills,	550,000	100	105	65	*70	–
Stafford Mills,	1,000,000	100	112¼	100	108	94
Tecumseh Mills,	500,000	100	117½	103½	103	100
Thorndike Co.,	450,000	1,000	–	–	*1,062½	–
Tremont & Suffolk Mills,	2,000,000	100	157½	138¾	143½	120

* Only sale. † New York prices. ‡ Par value of stock reduced from $1,000.

Stock Price Quotations — Concluded.

Names of Companies.	Capital Stock, Jan. 1, 1901	Par Value of Stock	Stock Price Quotations			
			1900 (12 months)		1901 (9 months)	
			Highest	Lowest	Highest	Lowest
Troy Cotton & Woollen Manufactory,	$300,000	$500	1,300	1,250	*127½	–
Union Bag & Paper Co.,	16,000,000	100	†25	†10	†19⅜	†12
Union Bag & Paper Co. (pref.),	11,000,000	100	†77¾	†56¼	†75	†65
Union Cotton Manufacturing Co.,	1,200,000	100	215	128	134	130
United Shoe Machinery Co.,	8,930,800	25	33⅛	28	45¾	30¼
United Shoe Machinery Co. (pref.),	9,240,875	25	25	22½	30	22
United States Leather Co.,	62,869,800	100	18⅞	8	16⅝	7¾
United States Leather Co. (pref.),	62,869,800	100	78	65⅜	83¾	69½
United States Rubber Co.,	23,666,000	100	43	21	34	13½
United States Rubber Co. (pref.),	23,525,500	100	105½	75	84	50
United States Steel Co.,	507,675,300	100	–	–	55	24
United States Steel Co. (pref.),	509,498,500	100	–	–	101⅞	69
Wamsutta Mills,	3,000,000	100	107¾	104	109¾	108¼
Wampanoag Mills,	750,000	100	105¼	92½	90	90
Weetamoe Mills,	550,000	100	67	57½	63½	55
Whitman Mills,	550,000	100	115	105	120¼	120

* Only sale. † New York prices.

INDUSTRIAL DIVIDENDS.

In the following table, we reproduce, as a matter of record, the dividends paid in certain manufacturing corporations doing business in this Commonwealth, as compiled by Frank A. Ruggles of Boston. The figures for 1900 represent a full year, those for 1901, nine months.

Names of Companies.	Rate of Dividends	
	1900 (12 months)	1901 (9 months)
Appleton Co.,	7	4
Arlington Mills,	6	6
Atlantic Mills,	4	2
Bigelow Carpet Co.,	1½	5
Boott Cotton Mills,	6	0
Boston Belting Co.,	8	8
Boston Duck Co.,	10	10
Boston Manufacturing Co.,	–	0
Chicopee Manufacturing Co.,	6	3
Dwight Manufacturing Co.,	12	12
Everett Mills,	6	6
Hamilton Manufacturing Co.,	6	3
Hamilton Woollen Co.,	4	4½
Lancaster Mills,	8	0
Lawrence Manufacturing Co.,	8	*3
Lowell Bleachery,	4	0
Lowell Machine Shops,	10	5
Lyman Mills,	4	4

* Also, $66.67 extra dividend, occasioned by increase in capital stock.

Industrial Dividends — Concluded.

Names of Companies.	Rate of Dividends	
	1900 (12 months)	**1901** (9 months)
Massachusetts Cotton Mills,	6	6
Merrimac Manufacturing Co.,	*6	3
Middlesex Co.,	6	3
Naumkeag Steam Cotton Co.,	4	2
Otis Mills,	10	10
Pacific Mills,	†30	5
Thorndike Co.,	8	8
Tremont & Suffolk Mills,	8	4
Wamsutta Mills,	6	4½

* Increased capital stock from $2,500,000 to $2,750,000 in July, and reduced par value of stock from $1,000 to $100—10 shares for one.

† Increased capital stock from $2,500,000 to $3,000,000 in March, and at same time paid extra cash dividend of 20 per cent which just covered the increase.

PART II.

STATISTICS OF MANUFACTURES.

1900, 1901.

Part II.

Statistics of Manufactures. 1900, 1901.

Introduction.

This Part contains the sixteenth report of the Annual Statistics of Manufactures, issued in accordance with the provisions of Chapter 107 of the Revised Laws of Massachusetts.

The statistical presentations have been prepared from the returns made by 4,696 identical establishments covering each of the years 1900 and 1901, and are arranged under five section heads, as follows:

I. *Establishments and their Management.* Under this head are exhibited the data relating to the management of 4,696 establishments, showing the number of establishments controlled by private firms, corporations, and industrial combinations, together with the number of partners and stockholders interested therein separated as to males, females, estates, banks, trustees, etc.

II. *Investment, Materials Used, and Product.* This section covers the amount of capital devoted to production, the cost value of stock and materials used, and the selling value of the goods made and work done.

III. *Labor and its Compensation.* Under this section head are presented the average number of males and females employed; the smallest, greatest, and average number of persons employed of both sexes; the range of employment and unemployment, as shown by the excess of greatest number over smallest number of persons employed; the number of persons employed, both sexes, by months, with percentages of employment and unemployment for the nine leading industries; the total amount paid in wages during each of the years 1900 and 1901 together with the average yearly earnings per individual, without distinction as to sex or age; and the classified weekly

wages paid to adult males and females and to young persons under 21 years of age, for the nine leading industries.

IV. *Working Time and Proportion of Business Done.* Under this head are shown the average number of days in operation based upon the average number of persons employed, and the proportion of the business done each year in each establishment, on an average, based upon a maximum production of 100 per cent.

V. *General Summary of Industrial Conditions.* This section is devoted to a general *résumé* of the conditions of the industries of the Commonwealth as indicated by the returns made from 4,696 identical establishments in 1900 and 1901.

Each of the above sections is followed by a complete analysis of the tabular presentations which should be carefully read in order to understand the character and value of the returns.

The term "All Industries," used in these reports for aggregates, refers only to the numerical totals of the various columns and *not* to the total investment, production, persons employed, wages paid, etc. of *all* establishments engaged in the manufacturing and mechanical industries of the State. Such totals are presented only in the Decennial Census reports once in ten years. Wherever, therefore, All Industries are mentioned in this Part, it is understood that the 80 classified industries shown in the table on pages 44 and 45 are referred to; and wherever numerical aggregates are presented for All Industries or for any single industry, whether for capital devoted to production, stock used, goods made, persons employed, wages paid, etc., only such aggregates are intended as are derived from the 4,696 establishments each of which made returns for the years 1900 and 1901, and for which it is, therefore, possible to make comparisons, unless some other meaning is distinctly stated in the text.

Establishments and Their Management.

The word "Establishment," as used in this Report, should be understood as meaning the factory, mill, or shop from which a report has been secured, and not the firm or corporation controlling said factory, mill, or shop.

Below we present the number of establishments compared in each year since the first publication of these annual reports.

Years.	Establishments	Years.	Establishments	Years.	Establishments
1886, 1887, . .	1,027	1892, . . .	4,473	1897, . . .	4,695
1888, . . .	1,140	1893, . . .	4,397	1898, . . .	4,701
1889, . . .	1,364	1894, . . .	4,093	1899, . . .	4,740
1890, . . .	3,041	1895, . . .	3,629	1900, . . .	4,645
1891, . . .	3,745	1896, . . .	4,609	1901, . . .	4,696

The presentations covering the data relating to the establishments and their management are arranged as follows:

1. The total number of establishments considered; the number of establishments controlled by private firms, corporations, and industrial combinations, respectively; and the number of such private firms, corporations, and industrial combinations for each of the years 1900 and 1901.

2. The number of male and female partners, the number of special partners, and the number of estates engaged in carrying on the private firms.

3. The number of males and females, and the number of banks, trustees, etc., interested in the management of the corporations as stockholders.

Attention is called to the head-notes on pages 44 and 46, in which it is stated that certain unavoidable duplications occur in the columns devoted to private firms, corporations, and industrial combinations; and to the head-notes on pages 52 and 54, in which the omission of stockholders for industrial combinations is explained.

PRIVATE FIRMS, CORPORATIONS, ETC.: BY INDUSTRIES.

1900.

[This presentation shows the aggregate number of establishments considered, the number of these establishments which are conducted by private firms; by corporations; and by industrial combinations, together with the actual number of such firms, corporations, and combinations. There are certain duplications in management, caused by the fact that the same firm, corporation, or combination is often engaged in manufacturing in more than one industry. The industries in which they occur have been indicated by an asterisk (*), and the plan adopted in such cases has been to consider each establishment, whether managed in connection with another or not, as a unit, and to credit the entire number of firms, etc., to each industry. The last three columns of the table show the actual number of firms, corporations, and combinations, all duplications having been eliminated except as they occur between the industries, and in making up the total for All Industries these duplications, too, have been omitted; so that the final line in the table shows the exact number of different private firms, corporations, and industrial combinations conducting the specified number of establishments.]

Industries.	Number of Establishments Considered	Establishments Conducted by—			Number of—		
		Private Firms	Corporations	Industrial Combinations	Firms	Corporations	Combinations
Agricultural implements,	9	4	5	–	4	5	–
Arms and ammunition,	12	7	5	–	7	5	–
Artisans' tools,	76	54	22	–	54	22	–
Awnings, sails, tents, etc.,	37	36	1	–	36	1	–
Bicycles, tricycles, etc.,*	9	4	3	2	4	3	1
Boots and shoes,*	692	602	90	–	602	88	–
Boots and shoes (factory product),*	431	359	72	–	359	70	–
Soles, heels, and cut stock,*	210	196	14	–	196	14	–
Boot and shoe findings,	29	25	4	–	25	4	–
Stitching, heeling, etc.,	22	22	–	–	22	–	–
Boxes, barrels, kegs, etc.,*	121	103	18	–	102	17	–
Boxes (paper),*	67	56	11	–	55	11	–
Brick, tiles, and sewer pipe,*	65	50	15	–	50	14	–
Brooms, brushes, and mops,	23	19	4	–	19	4	–
Building materials,	46	32	14	–	32	14	–
Burial cases, caskets, coffins, etc.,	5	3	2	–	3	2	–
Buttons and dress trimmings,	16	7	9	–	7	9	–
Carpetings,*	9	2	7	–	2	6	–
Carriages and wagons,*	121	105	16	–	105	16	–
Cement, kaolin, lime, and plaster,	10	7	3	–	7	3	–
Chemical preparations (compounded),	13	7	6	–	7	6	–
Clocks and watches,	10	8	2	–	8	2	–
Clothing,*	152	116	36	–	116	35	–
Cooking, lighting, and heating apparatus,*	43	23	20	–	23	20	–
Cordage and twine,	24	15	9	–	15	9	–
Cotton goods,*	157	25	124	8	25	120	1
Cotton goods (woven),*	114	11	103	–	11	99	–
Cotton yarn and thread,*	34	9	17	8	9	17	1
Cotton waste,*	9	5	4	–	5	4	–
Crayons, pencils, crucibles, etc.,	4	2	2	–	2	2	–
Drugs and medicines,	25	14	11	–	14	11	–
Dyestuffs,	6	4	2	–	4	2	–
Earthen, plaster, and stone ware,	12	10	2	–	10	2	–
Electrical apparatus and appliances,	24	7	17	–	7	17	–
Electroplating,*	9	9	–	–	9	–	–
Emery and sand paper and cloth, etc.,	7	1	6	–	1	6	–
Fancy articles, etc.,	13	9	4	–	9	4	–
Fertilizers,	7	4	3	–	4	3	–

PRIVATE FIRMS, ETC.: BY INDUSTRIES — **1900** — Concluded.

Industries.	Number of Establishments Considered	Establishments Conducted by —			Number of —		
		Private Firms	Corporations	Industrial Combinations	Firms	Corporations	Combinations
Fine arts and taxidermy,	3	2	1	–	2	1	–
Fireworks and matches,	3	2	1	–	2	1	–
Flax, hemp, and jute goods,	11	3	8	–	3	8	–
Food preparations,*	334	278	49	7	278	49	2
Furniture,*	127	101	26	–	100	25	–
Glass,	14	11	3	–	11	3	–
Glue, isinglass, and starch,	22	14	8	–	14	8	–
Hair work (animal and human),	6	5	1	–	5	1	–
Hose and belting: rubber, linen, etc.,	6	4	2	–	4	2	–
Hosiery and knit goods,	35	16	19	–	16	19	–
Ink, mucilage, and paste,	7	6	1	–	6	1	–
Ivory, bone, shell, and horn goods, etc.,	32	22	10	–	22	10	–
Jewelry,	102	87	15	–	87	15	–
Leather,*	100	76	16	8	76	16	1
Leather goods,*	29	19	10	–	19	9	–
Liquors (bottled) and carbonated beverages,	25	17	8	–	17	8	–
Liquors (malt),*	39	6	29	4	6	17	2
Liquors (distilled),	7	6	1	–	6	1	–
Lumber,*	23	20	3	–	20	3	–
Machines and machinery,*	356	215	137	4	215	132	1
Metals and metallic goods,*	368	242	124	2	240	123	2
Models, lasts, and patterns,*	47	42	5	–	42	5	–
Musical instruments and materials,	53	32	21	–	32	21	–
Oils and illuminating fluids,	9	7	2	–	7	2	–
Paints, colors, and crude chemicals,*	27	16	10	1	16	10	1
Paper,*	75	16	38	21	16	35	2
Paper goods,*	42	18	16	8	18	16	2
Perfumes, toilet articles, etc.,	4	4	–	–	4	–	–
Photographs and photographic materials,	16	13	3	–	13	3	–
Polishes and dressing,*	36	27	9	–	27	9	–
Printing, publishing, and bookbinding,	60	37	23	–	37	23	–
Print works, dye works, and bleacheries,*	45	24	21	–	24	21	–
Railroad construction and equipment,*	15	3	12	–	3	†7	–
Rubber and elastic goods,*	47	22	24	1	21	24	1
Saddlery and harness,	25	22	3	–	22	3	–
Scientific instruments and appliances,	18	14	4	–	14	4	–
Shipbuilding,	46	43	3	–	43	3	–
Silk and silk goods,	12	5	7	–	5	7	–
Sporting and athletic goods,	11	6	5	–	6	5	–
Stone,*	194	176	18	–	176	16	–
Quarried,*	45	30	15	–	30	13	–
Cut and monumental,	149	146	3	–	146	3	–
Straw and palm leaf goods,	20	17	3	–	17	3	–
Tallow, candles, soap, and grease,*	60	50	10	–	50	10	–
Tobacco, snuff, and cigars,	74	67	7	–	67	7	–
Toys and games (children's),	9	4	5	–	4	5	–
Trunks and valises,	7	7	–	–	7	–	–
Whips, lashes, and stocks,	12	7	5	–	7	5	–
Wooden goods,	73	60	12	1	60	12	1
Woollen goods,*	148	84	56	8	83	53	3
Woven goods and yarn,*	120	63	49	8	62	46	3
Shoddy, waste, etc.,	28	21	7	–	21	7	–
Worsted goods,*	38	19	14	5	19	14	1
All Industries,	4,696	3,339	1,277	80	3,323	1,225	19

† Includes 3 railroad corporations.

PRIVATE FIRMS, CORPORATIONS, ETC.: BY INDUSTRIES.

1901.

[This presentation shows the aggregate number of establishments considered, the number of these establishments which are conducted by private firms; by corporations; and by industrial combinations, together with the actual number of such firms, corporations, and combinations. There are certain duplications in management, caused by the fact that the same firm, corporation, or combination is often engaged in manufacturing in more than one industry. The industries in which they occur have been indicated by an asterisk (*), and the plan adopted in such cases has been to consider each establishment, whether managed in connection with another or not, as a unit, and to credit the entire number of firms, etc., to each industry. The last three columns of the table show the actual number of firms, corporations, and combinations, all duplications having been eliminated except as they occur between the industries, and in making up the total for All Industries these duplications, too, have been omitted; so that the final line in the table shows the exact number of different private firms, corporations, and industrial combinations conducting the specified number of establishments.]

Industries.	Number of Establishments Considered	Establishments Conducted by—			Number of—		
		Private Firms	Corporations	Industrial Combinations	Firms	Corporations	Combinations
Agricultural implements,	9	4	5	–	4	5	–
Arms and ammunition,	12	7	5	–	7	5	–
Artisans' tools,	76	54	22	–	54	22	–
Awnings, sails, tents, etc.,	37	36	1	–	36	1	–
Bicycles, tricycles, etc.,	9	4	5	–	4	5	–
Boots and shoes,*	692	599	93	–	599	91	–
Boots and shoes (factory product),*	431	355	76	–	355	74	–
Soles, heels, and cut stock,*	210	197	13	–	197	13	–
Boot and shoe findings,	29	25	4	–	25	4	–
Stitching, heeling, etc.,	22	22	–	–	22	–	–
Boxes, barrels, kegs, etc.,*	121	99	22	–	98	21	–
Boxes (paper),*	67	56	11	–	55	11	–
Brick, tiles, and sewer pipe,*	65	43	12	10	43	11	1
Brooms, brushes, and mops,	23	18	5	–	18	5	–
Building materials,	46	31	15	–	31	15	–
Burial cases, caskets, coffins, etc.,	5	3	2	–	3	2	–
Buttons and dress trimmings,	16	7	9	–	7	9	–
Carpetings,*	9	3	6	–	2	5	–
Carriages and wagons,*	121	103	18	–	103	18	–
Cement, kaolin, lime, and plaster,	10	6	4	–	6	4	–
Chemical preparations (compounded),	13	6	7	–	6	7	–
Clocks and watches,	10	7	3	–	7	3	–
Clothing,*	152	116	36	–	116	35	–
Cooking, lighting, and heating apparatus,*	43	23	20	–	23	20	–
Cordage and twine,	24	15	9	–	15	9	–
Cotton goods,*	157	24	125	8	24	121	1
Cotton goods (woven),*	114	10	104	–	10	100	–
Cotton yarn and thread,*	34	9	17	8	9	17	1
Cotton waste,*	9	5	4	–	5	4	–
Crayons, pencils, crucibles, etc.,	4	2	2	–	2	2	–
Drugs and medicines,	25	12	13	–	12	13	–
Dyestuffs,	6	3	3	–	3	3	–
Earthen, plaster, and stone ware,	12	10	2	–	10	2	–
Electrical apparatus and appliances,	24	6	18	–	6	18	–
Electroplating,*	9	9	–	–	9	–	–
Emery and sand paper and cloth, etc.,	7	1	6	–	1	6	–
Fancy articles, etc.,	13	9	4	–	9	4	–
Fertilizers,	7	3	4	–	3	4	–

PRIVATE FIRMS, ETC.: BY INDUSTRIES — **1901** — Concluded.

Industries.	Number of Establishments Considered	Establishments Conducted by—			Number of—		
		Private Firms	Corporations	Industrial Combinations	Firms	Corporations	Combinations
Fine arts and taxidermy,	3	2	1	–	2	1	–
Fireworks and matches,	3	2	1	–	2	1	–
Flax, hemp, and jute goods,	11	3	8	–	3	8	–
Food preparations,*	334	276	51	7	276	51	2
Furniture,*	127	102	25	–	101	24	–
Glass,	14	11	3	–	11	3	–
Glue, isinglass, and starch,	22	14	8	–	14	8	–
Hair work (animal and human),	6	5	1	–	5	1	–
Hose and belting: rubber, linen, etc.,	6	4	2	–	4	2	–
Hosiery and knit goods,	35	16	19	–	16	19	–
Ink, mucilage, and paste,	7	6	1	–	6	1	–
Ivory, bone, shell, and horn goods, etc.,	32	22	10	–	22	10	–
Jewelry,	102	85	17	–	85	17	–
Leather,*	100	75	17	8	75	16	1
Leather goods,*	29	18	11	–	18	10	–
Liquors (bottled) and carbonated beverages,	25	16	9	–	16	9	–
Liquors (malt),*	39	5	30	4	5	18	2
Liquors (distilled),	7	6	1	–	6	1	–
Lumber,*	23	20	3	–	20	3	–
Machines and machinery,*	356	209	143	4	209	138	1
Metals and metallic goods,*	368	241	123	4	239	121	3
Models, lasts, and patterns,*	47	41	6	–	41	6	–
Musical instruments and materials,	53	29	24	–	29	24	–
Oils and illuminating fluids,*	9	7	2	–	6	2	–
Paints, colors, and crude chemicals,*	27	15	11	1	15	11	1
Paper,*	75	16	38	21	16	35	2
Paper goods,*	42	17	17	8	17	17	2
Perfumes, toilet articles, etc.,	4	4	–	–	4	–	–
Photographs and photographic materials,	16	11	5	–	11	5	–
Polishes and dressing,*	36	26	10	–	26	10	–
Printing, publishing, and bookbinding,	60	37	23	–	37	23	–
Print works, dye works, and bleacheries,*	45	24	21	–	24	21	–
Railroad construction and equipment,*	15	2	13	–	2	†8	–
Rubber and elastic goods,*	47	20	26	1	19	26	1
Saddlery and harness,	25	22	3	–	22	3	–
Scientific instruments and appliances,	18	14	4	–	14	4	–
Shipbuilding,	46	42	4	–	42	4	–
Silk and silk goods,	12	5	7	–	5	7	–
Sporting and athletic goods,	11	6	5	–	6	5	–
Stone,*	194	176	18	–	176	16	–
Quarried,*	45	30	15	–	30	13	–
Cut and monumental,	149	146	3	–	146	3	–
Straw and palm leaf goods,	20	16	4	–	16	4	–
Tallow, candles, soap, and grease,*	60	49	11	–	49	11	–
Tobacco, snuff, and cigars,	74	65	9	–	65	9	–
Toys and games (children's),	9	4	5	–	4	5	–
Trunks and valises,	7	7	–	–	7	–	–
Whips, lashes, and stocks,	12	6	6	–	6	6	–
Wooden goods,	73	60	12	1	60	12	1
Woollen goods,*	148	85	55	8	84	52	3
Woven goods and yarn,*	120	65	47	8	64	44	3
Shoddy, waste, etc.,	28	20	8	–	20	8	–
Worsted goods,*	38	17	16	5	17	16	1
All Industries,	4,696	3,280	1,326	90	3,262	1,272	20

† Includes 3 railroad corporations.

PARTNERS: BY INDUSTRIES.

1900.

[This presentation shows the number of partners comprising the 3,323 private firms engaged in the management of the 3,339 establishments. As explained in the preceding presentation, duplications in partners occur in the industries indicated by an asterisk (*), since the same firm is sometimes engaged in more than one industry, and the plan, as stated, has been to consider each establishment as a unit and to credit thereto the whole number of partners, but in making up the total for All Industries to omit duplications; so that the final line in the table shows the exact number of partners conducting the specified number of private firms.]

Industries.	Number of Private Firms	Number of Partners				
		Males	Females	Special	Estates	Totals
Agricultural implements,	4	5	–	–	–	5
Arms and ammunition,	7	10	–	–	2	12
Artisans' tools,	54	72	1	–	2	75
Awnings, sails, tents, etc.,	36	49	1	–	–	50
Bicycles, tricycles, etc.,	4	6	–	–	–	6
Boots and shoes,*	602	962	25	8	5	1,000
Boots and shoes (factory product),	359	621	13	7	2	643
Soles, heels, and cut stock,*	196	280	9	1	3	293
Boot and shoe findings,	25	37	–	–	–	37
Stitching, heeling, etc.,	22	24	3	–	–	27
Boxes, barrels, kegs, etc.,*	103	133	3	1	1	138
Boxes (paper),*	56	72	6	1	–	79
Brick, tiles, and sewer pipe,	50	70	5	–	2	77
Brooms, brushes, and mops,	19	24	1	–	1	26
Building materials,	32	49	1	–	1	51
Burial cases, caskets, coffins, etc.,	3	7	–	–	–	7
Buttons and dress trimmings,	7	7	2	–	–	9
Carpetings,	2	5	–	–	–	5
Carriages and wagons,*	105	172	–	1	2	175
Cement, kaolin, lime, and plaster,	7	12	–	–	1	13
Chemical preparations (compounded),	7	10	1	–	–	11
Clocks and watches,	8	13	–	–	–	13
Clothing,	116	211	5	2	2	220
Cooking, lighting, and heating apparatus,	23	32	1	1	1	35
Cordage and twine,	15	21	2	2	2	27
Cotton goods,*	25	37	9	–	–	46
Cotton goods (woven),	11	20	6	–	–	26
Cotton yarn and thread,	9	10	2	–	–	12
Cotton waste,*	5	7	1	–	–	8
Crayons, pencils, crucibles, etc.,	2	2	–	–	–	2
Drugs and medicines,	14	16	–	–	1	17
Dyestuffs,	4	7	–	–	–	7
Earthen, plaster, and stone ware,	10	10	–	–	–	10
Electrical apparatus and appliances,	7	11	–	–	–	11
Electroplating,*	9	11	–	–	–	11
Emery and sand paper and cloth, etc.,	1	1	–	–	–	1
Fancy articles, etc.,	9	9	1	–	–	10
Fertilizers,	4	6	–	–	–	6
Fine arts and taxidermy,	2	3	–	–	–	3
Fireworks and matches,	2	4	–	–	–	4

PARTNERS: BY INDUSTRIES — **1900** — Concluded.

Industries.	Number of Private Firms	Number of Partners				
		Males	Females	Special	Estates	Totals
Flax, hemp, and jute goods,	3	5	–	–	–	5
Food preparations,*	278	363	13	–	7	383
Furniture,*	101	152	7	1	1	161
Glass,	11	17	2	–	–	19
Glue, isinglass, and starch,	14	28	1	–	–	29
Hair work (animal and human),	5	5	1	–	–	6
Hose and belting: rubber, linen, etc.,	4	4	–	–	1	5
Hosiery and knit goods,	16	26	1	1	–	28
Ink, mucilage, and paste,	6	9	–	–	–	9
Ivory, bone, shell, and horn goods, etc.,	22	35	1	–	1	37
Jewelry,	87	157	7	1	3	168
Leather,	76	120	4	–	–	124
Leather goods,	19	29	1	3	–	33
Liquors (bottled) and carbonated beverages,	17	21	5	–	1	27
Liquors (malt),	6	11	5	–	–	16
Liquors (distilled),	6	11	–	–	–	11
Lumber,*	20	29	4	–	–	33
Machines and machinery,*	215	314	11	–	7	332
Metals and metallic goods,*	242	340	8	3	7	358
Models, lasts, and patterns,	42	64	1	–	–	65
Musical instruments and materials,	32	48	1	–	–	49
Oils and illuminating fluids,	7	9	–	–	–	9
Paints, colors, and crude chemicals,	16	29	–	–	1	30
Paper,*	16	36	–	–	3	39
Paper goods,	18	27	–	–	–	27
Perfumes, toilet articles, etc.,	4	3	1	–	–	4
Photographs and photographic materials,	13	17	1	–	–	18
Polishes and dressing,*	27	39	1	–	1	41
Printing, publishing, and bookbinding,	37	66	4	–	1	71
Print works, dye works, and bleacheries,	24	33	4	–	1	38
Railroad construction and equipment,	3	3	–	–	–	3
Rubber and elastic goods,*	22	43	1	–	2	46
Saddlery and harness,	22	27	–	–	1	28
Scientific instruments and appliances,	14	18	1	–	–	19
Shipbuilding,	43	57	–	–	1	58
Silk and silk goods,	5	6	–	–	–	6
Sporting and athletic goods,	6	7	–	–	–	7
Stone,	176	236	8	–	5	249
Quarried,	30	42	3	–	1	46
Cut and monumental,	146	194	5	–	4	203
Straw and palm leaf goods,	17	34	–	–	–	34
Tallow, candles, soap, and grease,*	50	72	–	–	3	75
Tobacco, snuff, and cigars,	67	97	2	–	–	99
Toys and games (children's),	4	7	2	–	–	9
Trunks and valises,	7	13	–	–	–	13
Whips, lashes, and stocks,	7	10	1	–	–	11
Wooden goods,	60	78	3	–	2	83
Woollen goods,*	84	125	5	–	2	132
Woven goods and yarn,*	63	98	4	–	2	104
Shoddy, waste, etc.,	21	27	1	–	–	28
Worsted goods,	19	33	1	–	–	34
All Industries,	3,323	4,951	168	25	74	5,218

PARTNERS: BY INDUSTRIES.

1901.

[This presentation shows the number of partners comprising the 3,262 private firms engaged in the management of the 3,280 establishments. As explained in the preceding presentation, duplications in partners occur in the industries indicated by an asterisk (*), since the same firm is sometimes engaged in more than one industry, and the plan, as stated, has been to consider each establishment as a unit and to credit thereto the whole number of partners, but in making up the total for All Industries to omit duplications; so that the final line in the table shows the exact number of partners conducting the specified number of private firms.]

Industries.	Number of Private Firms	Number of Partners				
		Males	Females	Special	Estates	Totals
Agricultural implements,	4	5	–	–	–	5
Arms and ammunition,	7	12	1	–	1	14
Artisans' tools,	54	76	1	–	–	77
Awnings, sails, tents, etc.,	36	47	1	–	–	48
Bicycles, tricycles, etc.,	4	6	–	–	–	6
Boots and shoes,*	599	936	30	10	5	981
Boots and shoes (factory product),	355	601	18	9	2	630
Soles, heels, and cut stock,*	197	275	8	1	3	287
Boot and shoe findings,	25	36	1	–	–	37
Stitching, heeling, etc.,	22	24	3	–	–	27
Boxes, barrels, kegs, etc.,*	99	130	1	1	–	132
Boxes (paper),*	56	70	5	1	1	77
Brick, tiles, and sewer pipe,	43	62	5	–	2	69
Brooms, brushes, and mops,	18	24	3	–	1	28
Building materials,	31	47	1	–	1	49
Burial cases, caskets, coffins, etc.,	3	7	–	–	–	7
Buttons and dress trimmings,	7	10	2	–	–	12
Carpetings,*	3	5	–	–	–	5
Carriages and wagons,*	103	163	3	–	2	168
Cement, kaolin, lime, and plaster,	6	11	3	–	–	14
Chemical preparations (compounded),	6	8	1	–	–	9
Clocks and watches,	7	12	–	–	–	12
Clothing,	116	206	7	2	–	215
Cooking, lighting, and heating apparatus,	23	31	–	–	1	32
Cordage and twine,	15	21	2	2	2	27
Cotton goods,*	24	36	6	–	–	42
Cotton goods (woven),	10	19	3	–	–	22
Cotton yarn and thread,	9	10	2	–	–	12
Cotton waste,*	5	7	1	–	–	8
Crayons, pencils, crucibles, etc.,	2	2	–	–	–	2
Drugs and medicines,	12	16	–	–	1	17
Dyestuffs,	3	4	–	–	1	5
Earthen, plaster, and stone ware,	10	9	–	–	1	10
Electrical apparatus and appliances,	6	8	–	–	–	8
Electroplating,*	9	11	–	–	–	11
Emery and sand paper and cloth, etc.,	1	1	–	–	–	1
Fancy articles, etc.,	9	9	1	–	–	10
Fertilizers,	3	4	–	–	–	4
Fine arts and taxidermy,	2	3	–	–	–	3
Fireworks and matches,	2	4	–	–	–	4

PARTNERS: BY INDUSTRIES—**1901**—Concluded.

Industries.	Number of Private Firms	Number of Partners				
		Males	Females	Special	Estates	Totals
Flax, hemp, and jute goods,	3	5	–	–	–	5
Food preparations,*	276	356	13	–	5	374
Furniture,*	102	156	8	–	1	165
Glass,	11	16	2	–	–	18
Glue, isinglass, and starch,	14	29	1	–	–	30
Hair work (animal and human),	5	7	–	–	–	7
Hose and belting: rubber, linen, etc.,	4	8	–	–	–	8
Hosiery and knit goods,	16	28	2	–	–	30
Ink, mucilage, and paste,	6	9	–	–	–	9
Ivory, bone, shell, and horn goods, etc.,	22	35	2	–	1	38
Jewelry,	85	158	7	1	2	168
Leather,	75	115	3	–	1	119
Leather goods,	18	27	1	1	–	29
Liquors (bottled) and carbonated beverages,	16	19	5	–	1	25
Liquors (malt),	5	10	5	–	–	15
Liquors (distilled),	6	11	–	–	–	11
Lumber,*	20	32	4	–	–	36
Machines and machinery,*	209	302	7	–	11	320
Metals and metallic goods,*	241	332	9	3	7	351
Models, lasts, and patterns,	41	61	1	–	–	62
Musical instruments and materials,	29	42	1	–	–	43
Oils and illuminating fluids,*	7	9	–	–	–	9
Paints, colors, and crude chemicals,	15	26	–	–	1	27
Paper,*	16	35	1	–	1	37
Paper goods,	17	23	–	–	–	23
Perfumes, toilet articles, etc.,	4	3	1	–	–	4
Photographs and photographic materials,	11	13	1	–	–	14
Polishes and dressing,*	26	41	1	–	–	42
Printing, publishing, and bookbinding,	37	68	3	–	1	72
Print works, dye works, and bleacheries,	24	32	4	–	1	37
Railroad construction and equipment,	2	2	–	–	–	2
Rubber and elastic goods,*	20	42	–	–	2	44
Saddlery and harness,	22	27	–	–	1	28
Scientific instruments and appliances,	14	18	2	–	1	21
Shipbuilding,	42	54	–	–	1	55
Silk and silk goods,	5	5	–	–	–	5
Sporting and athletic goods,	6	7	–	–	–	7
Stone,	176	237	7	–	5	249
Quarried,	30	42	2	–	2	46
Cut and monumental,	146	195	5	–	3	203
Straw and palm leaf goods,	16	32	–	–	1	33
Tallow, candles, soap, and grease,*	49	73	–	–	2	75
Tobacco, snuff, and cigars,	65	91	2	–	–	93
Toys and games (children's),	4	7	2	–	–	9
Trunks and valises,	7	13	–	–	–	13
Whips, lashes, and stocks,	6	8	1	–	–	9
Wooden goods,	60	79	2	–	2	83
Woollen goods,*	85	123	5	–	3	131
Woven goods and yarn,*	65	97	4	–	3	104
Shoddy, waste, etc.,	20	26	1	–	–	27
Worsted goods,	17	29	1	–	–	30
All Industries,	3,262	4,828	172	21	70	5,091

STOCKHOLDERS: BY INDUSTRIES.

1900.

[This presentation shows the number of stockholders in the 1,225 corporations engaged in the management of the 1,277 establishments. As in the preceding presentation, duplications occur in the industries indicated by an asterisk (*), since the same corporation is sometimes engaged in more than one industry, and the plan, as stated, has been to consider each establishment as a unit and to credit thereto the whole number of stockholders, but in making up the total for All Industries to omit duplications. Stockholders in certain establishments which are operated by railroad companies, or by industrial combinations, many of which have extensive investments of capital outside this Commonwealth, are not included in this presentation, since to include all the stockholders of a railroad company, or of an industrial combination, in connection with such merely branch establishments incidental only to the main business of the corporation, would result in abnormally increasing the aggregate.]

Industries.	Number of Corporations	Number of Stockholders			
		Males	Females	Banks, Trustees, etc.	Totals
Agricultural implements,	5	38	17	21	76
Arms and ammunition,	5	109	51	19	179
Artisans' tools,	22	522	308	107	937
Awnings, sails, tents, etc.,	1	7	1	-	8
Bicycles, tricycles, etc.,*	3	31	1	-	32
Boots and shoes,*	90	734	176	52	962
Boots and shoes (factory product),*	72	507	64	32	603
Soles, heels, and cut stock,*	14	210	110	20	340
Boot and shoe findings,	4	17	2	-	19
Stitching, heeling, etc.,	-	-	-	-	-
Boxes, barrels, kegs, etc.,*	18	94	24	17	135
Boxes (paper),*	11	57	5	2	64
Brick, tiles, and sewer pipe,*	15	224	80	16	320
Brooms, brushes, and mops,	4	29	25	1	55
Building materials,	14	159	23	4	186
Burial cases, caskets, coffins, etc.,	2	31	10	7	48
Buttons and dress trimmings,	9	67	22	6	95
Carpetings,*	7	793	765	341	1,899
Carriages and wagons,*	16	146	52	4	202
Cement, kaolin, lime, and plaster,	3	18	-	-	18
Chemical preparations (compounded),	6	87	42	10	139
Clocks and watches,	2	266	285	76	627
Clothing,*	36	445	182	34	661
Cooking, lighting, and heating apparatus,*	20	175	55	24	254
Cordage and twine,	9	365	202	38	605
Cotton goods,*	124	9,531	8,292	3,071	20,894
Cotton goods (woven),*	103	9,007	7,952	2,980	19,939
Cotton yarn and thread,*	17	505	334	90	929
Cotton waste,*	4	19	6	1	26
Crayons, pencils, crucibles, etc.,	2	14	2	-	16
Drugs and medicines,	11	88	42	2	132
Dyestuffs,	2	40	12	5	57
Earthen, plaster, and stone ware,	2	10	1	-	11
Electrical apparatus and appliances,	17	446	114	39	599
Electroplating,*	-	-	-	-	-
Emery and sand paper and cloth, etc.,	6	70	26	10	106
Fancy articles, etc.,	4	24	11	-	35
Fertilizers,	3	214	86	4	304
Fine arts and taxidermy,	1	7	1	-	8
Fireworks and matches,	1	4	1	-	5

STOCKHOLDERS: BY INDUSTRIES — 1900 — Concluded.

Industries.	Number of Corporations	Number of Stockholders			
		Males	Females	Banks, Trustees, etc.	Totals
Flax, hemp, and jute goods,	8	98	50	16	164
Food preparations,*	49	770	213	58	1,041
Furniture,*	26	519	283	109	911
Glass,	3	53	16	1	70
Glue, isinglass, and starch,	8	208	62	14	284
Hair work (animal and human),	1	121	15	-	136
Hose and belting: rubber, linen, etc.,	2	7	1	-	8
Hosiery and knit goods,	19	475	338	181	994
Ink, mucilage, and paste,	1	4	-	-	4
Ivory, bone, shell, and horn goods, etc.,	10	43	6	-	49
Jewelry,	15	63	7	1	71
Leather,*	16	72	6	3	81
Leather goods,*	10	188	89	10	287
Liquors (bottled) and carbonated beverages,	8	79	16	5	100
Liquors (malt),*	29	1,447	191	20	1,658
Liquors (distilled),	1	24	2	-	26
Lumber,*	3	36	35	2	73
Machines and machinery,*	137	2,906	1,551	361	4,818
Metals and metallic goods,*	124	1,350	616	167	2,133
Models, lasts, and patterns,*	5	22	7	1	30
Musical instruments and materials,	21	209	75	18	302
Oils and illuminating fluids,*	2	8	3	1	12
Paints, colors, and crude chemicals,*	10	80	23	1	104
Paper,*	38	397	153	40	590
Paper goods,*	16	336	165	22	523
Perfumes, toilet articles, etc.,	-	-	-	-	-
Photographs and photographic materials,	3	14	6	-	20
Polishes and dressing,	9	49	9	5	63
Printing, publishing, and bookbinding,	23	265	47	9	321
Print works, dye works, and bleacheries,*	21	575	474	407	1,456
Railroad construction and equipment,*	12	95	9	5	109
Rubber and elastic goods,*	24	560	385	107	1,052
Saddlery and harness,	3	19	8	-	27
Scientific instruments and appliances,	4	66	15	1	82
Shipbuilding,	3	83	13	3	99
Silk and silk goods,	7	126	31	4	161
Sporting and athletic goods,	5	35	5	1	41
Stone,*	18	344	134	32	510
Quarried,*	15	290	129	32	451
Cut and monumental,	3	54	5	-	59
Straw and palm leaf goods,	3	13	4	-	17
Tallow, candles, soap, and grease,*	10	67	33	15	115
Tobacco, snuff, and cigars,	7	31	7	6	44
Toys and games (children's),	5	29	4	-	33
Trunks and valises,	-	-	-	-	-
Whips, lashes, and stocks,	5	129	66	12	207
Wooden goods,	12	196	61	13	270
Woollen goods,*	56	719	536	266	1,521
Woven goods and yarn,*	49	697	525	265	1,487
Shoddy, waste, etc.,	7	22	11	1	34
Worsted goods,*	14	312	170	70	552
All Industries,	1,225	26,584	15,602	5,224	47,410

STOCKHOLDERS: BY INDUSTRIES.

1901.

[This presentation shows the number of stockholders in the 1,272 corporations engaged in the management of the 1,326 establishments. As in the preceding presentation, duplications occur in the industries indicated by an asterisk (*), since the same corporation is sometimes engaged in more than one industry, and the plan, as stated, has been to consider each establishment as a unit and to credit thereto the whole number of stockholders, but in making up the total for All Industries to omit duplications. Stockholders in certain establishments which are operated by railroad companies, or by industrial combinations, many of which have extensive investments of capital outside this Commonwealth, are not included in this presentation, since to include all the stockholders of a railroad company, or of an industrial combination, in connection with such merely branch establishments incidental only to the main business of the corporation, would result in abnormally increasing the aggregate.]

Industries.	Number of Corporations	Number of Stockholders			
		Males	Females	Banks, Trustees, etc.	Totals
Agricultural implements,	5	35	21	19	75
Arms and ammunition,	5	106	56	20	182
Artisans' tools,	22	522	333	90	945
Awnings, sails, tents, etc.,	1	9	–	1	10
Bicycles, tricycles, etc.,	5	44	1	2	47
Boots and shoes,*	93	738	185	40	963
Boots and shoes (factory product),*	76	522	68	22	612
Soles, heels, and cut stock,*	13	199	114	18	331
Boot and shoe findings,	4	17	3	–	20
Stitching, heeling, etc.,	–	–	–	–	–
Boxes, barrels, kegs, etc.,*	22	112	31	19	162
Boxes (paper),*	11	56	9	2	67
Brick, tiles, and sewer pipe,*	12	323	138	40	501
Brooms, brushes, and mops,	5	33	22	1	56
Building materials,	15	174	23	2	199
Burial cases, caskets, coffins, etc.,	2	30	10	7	47
Buttons and dress trimmings,	9	57	21	8	86
Carpetings,*	6	762	815	347	1,924
Carriages and wagons,*	18	174	51	6	231
Cement, kaolin, lime, and plaster,	4	21	–	3	24
Chemical preparations (compounded),	7	108	50	6	164
Clocks and watches,	3	267	297	81	645
Clothing,*	36	473	203	39	715
Cooking, lighting, and heating apparatus,*	20	156	61	25	242
Cordage and twine,	9	330	272	23	625
Cotton goods,*	125	9,538	8,418	3,057	21,013
Cotton goods (woven),*	104	9,023	8,058	2,951	20,032
Cotton yarn and thread,*	17	496	354	105	955
Cotton waste,*	4	19	6	1	26
Crayons, pencils, crucibles, etc.,	2	14	2	–	16
Drugs and medicines,	13	379	59	2	440
Dyestuffs,	3	42	17	4	63
Earthen, plaster, and stone ware,	2	11	1	–	12
Electrical apparatus and appliances,	18	580	195	93	868
Electroplating,*	–	–	–	–	–
Emery and sand paper and cloth, etc.,	6	69	26	9	104
Fancy articles, etc.,	4	25	13	–	38
Fertilizers,	4	221	92	5	318
Fine arts and taxidermy,	1	7	1	–	8
Fireworks and matches,	1	3	2	–	5

STOCKHOLDERS: BY INDUSTRIES — 1901 — Concluded.

Industries.	Number of Corporations	Number of Stockholders			
		Males	Females	Banks, Trustees, etc.	Totals
Flax, hemp, and jute goods,	8	98	58	24	180
Food preparations,*	51	657	202	51	910
Furniture,*	25	522	290	106	918
Glass,	3	51	15	1	67
Glue, isinglass, and starch,	8	188	73	32	293
Hair work (animal and human),	1	121	15	–	136
Hose and belting: rubber, linen, etc.,	2	7	1	–	8
Hosiery and knit goods,	19	497	364	178	1,039
Ink, mucilage, and paste,	1	4	–	–	4
Ivory, bone, shell, and horn goods, etc.,	10	46	5	–	51
Jewelry,	17	68	7	–	75
Leather,*	17	90	6	5	101
Leather goods,*	11	196	100	14	310
Liquors (bottled) and carbonated beverages,	9	91	16	5	112
Liquors (malt),*	30	1,482	210	12	1,704
Liquors (distilled),	1	24	2	–	26
Lumber,*	3	35	41	2	78
Machines and machinery,*	143	2,948	1,616	355	4,919
Metals and metallic goods,*	123	1,433	667	181	2,281
Models, lasts, and patterns,*	6	25	7	1	33
Musical instruments and materials,	24	235	82	19	336
Oils and illuminating fluids,*	2	6	2	1	9
Paints, colors, and crude chemicals,*	11	100	33	1	134
Paper,*	38	361	158	44	563
Paper goods,*	17	303	135	21	459
Perfumes, toilet articles, etc.,	–	–	–	–	–
Photographs and photographic materials,	5	28	16	1	45
Polishes and dressing,	10	53	8	7	68
Printing, publishing, and bookbinding,	23	251	52	8	311
Print works, dye works, and bleacheries,*	21	577	468	417	1,462
Railroad construction and equipment,*	13	99	14	7	120
Rubber and elastic goods,*	26	656	434	105	1,195
Saddlery and harness,	3	15	8	–	23
Scientific instruments and appliances,	4	47	11	3	61
Shipbuilding,	4	100	16	2	118
Silk and silk goods,	7	134	54	6	194
Sporting and athletic goods,	5	39	10	1	50
Stone,*	18	330	121	41	492
Quarried,*	15	282	116	41	439
Cut and monumental,	3	48	5	–	53
Straw and palm leaf goods,	4	17	4	–	21
Tallow, candles, soap, and grease,*	11	71	37	15	123
Tobacco, snuff, and cigars,	9	42	5	7	54
Toys and games (children's),	5	28	6	–	34
Trunks and valises,	–	–	–	–	–
Whips, lashes, and stocks,	6	131	69	9	209
Wooden goods,	12	193	60	15	268
Woollen goods,*	55	701	538	292	1,531
Woven goods and yarn,*	47	674	524	291	1,489
Shoddy, waste, etc.,	8	27	14	1	42
Worsted goods,*	16	343	197	76	616
All Industries,	1,272	27,360	16,353	5,325	49,038

Analysis.

From the foregoing presentations, it will be seen that in 1900, 3,323 private firms managed 3,339 establishments, and in 1901, 3,262 firms managed 3,280 establishments, a decrease, in 1901, of 61 private firms and 59 establishments.

In 1900, 1,225 corporations controlled 1,277 establishments, and in 1901, 1,272 corporations controlled 1,326 establishments; an increase, in 1901, of 47 in the number of corporations and of 49 in number of establishments.

In 1900, 19 industrial combinations controlled 80 establishments, and in 1901, 20 combinations controlled 90 establishments, an increase of one industrial combination and of 10 establishments in 1901 as compared with 1900.

While there was a decrease of 61 private firms and an increase of but 47 corporations and one industrial combination, with the consequent loss of 13 in the actual number of firms, corporations, and combinations, it should not be understood that this loss means the abandonment of the establishments which were managed by the 13 firms or corporations. It means simply that 13 firms or corporations were, in 1901, absorbed by firms, corporations, or combinations which were already in existence. There was no loss in the number of establishments, 4,696 reporting in both years. The figures indicate, however, the prevailing tendency towards the corporate form of management, and towards concentration, to which attention has been called in preceding issues of these Annual Reports.

Each corporation managed, on an average, 1.04 establishments in 1900 and 1.04 in 1901, and each industrial combination controlled, on an average, 4.21 establishments in 1900 and 4.50 in 1901, while the private firms each controlled, practically, but one establishment in both years.

In the head-notes to the presentations on pages 44 and 46 it is explained that duplications occur so far as the number of firms, corporations, and combinations are concerned, for the reason that one firm, corporation, or combination may carry on two or more establishments in the same or in different towns and industries. It is further explained that the plan adopted in the statistical presentation has been to consider each establishment, whether managed in connection with another or

not, as a unit, and to credit to each industry its own number of firms, corporations, and combinations, but when considering the total for "All Industries," to omit the duplications.

The same is also true in regard to partners and stockholders, as indicated in the head-notes on pages 48, 50, 52, and 54. Upon the last two named pages, attention is called to the fact that the stockholders of certain establishments which are operated by railroad companies, or by industrial combinations, many of which have extensive investments of capital outside this Commonwealth, are not included in the presentations; since to include all the stockholders of a railroad company, or of an industrial combination, in connection with such merely branch establishments incidental only to the main business of the corporation, would have the result of abnormally increasing the aggregate.

In this connection, it should be stated that only the number of firms, corporations, combinations, partners, and stockholders are affected by these duplications and omissions. The returns relative to capital devoted to production, stock used, goods made, persons employed, wages paid, etc., are made separately for each establishment, and in the tabular presentations are credited to the industry to which they properly belong. There are, therefore, no duplications or omissions in the number of establishments.

From the presentations relating to partners and stockholders (pages 48–55), we bring forward in the following table the aggregates for All Industries for the years 1900 and 1901, and show the increase or decrease in the later as compared with the earlier year:

Partners and Stockholders.	Number		Increase (+) or Decrease (−) in 1901	
	1900	1901	Number	Percentages
Partners.	5,218	5,091	−127	−2.43
Males,	4,951	4,828	−123	−2.48
Females,	168	172	+4	+2.38
Special and estates,	99	91	−8	−8.08
Stockholders.	47,410	49,038	+1,628	+3.43
Males,	26,584	27,360	+776	+2.92
Females,	15,602	16,353	+751	+4.81
Banks, trustees, etc.,	5,224	5,325	+101	+1.93

Partners and Stockholders.	Number		Increase (+) or Decrease (−) in 1901	
	1900	1901	Number	Percentages
Aggregates.	52,628	54,129	+1,501	+2.85
Males,	31,535	32,188	+653	+2.07
Females,	15,770	16,525	+755	+4.79
Special, banks, etc.,	5,323	5,416	+93	+1.75

The total number of partners shows a decrease of 2.43 per cent in 1901 as compared with 1900. The males decreased 2.48 per cent, the females increased 2.38 per cent, and the special partners and estates decreased 8.08 per cent.

The total number of stockholders shows an increase of 3.43 per cent in 1901 as against 1900. The males increased 2.92 per cent, the females 4.81 per cent, and the banks, trustees, etc., 1.93 per cent.

Comparing the aggregates for 1900 and 1901, an increase of 2.85 per cent appears in the later year. The males increased 2.07 per cent, females 4.79 per cent, and special partners, banks, etc., 1.75 per cent.

Considering the whole number of partners and stockholders, we find that the partners constituted 9.91 per cent and stockholders 90.09 per cent of the aggregate in 1900 and 9.41 per cent and 90.59 per cent, respectively, in 1901. Of the aggregate number of males, 15.70 per cent were in private firms in 1900 and 15 per cent in 1901. Of the females, 98.93 per cent of the aggregate were financially interested in corporations in 1900 and 98.96 per cent in 1901.

The next table exhibits the effect of the change from the private firm to the corporation upon the number of partners and stockholders in the aggregate and in the average:

Classification.	Number	
	1900	1901
Private firms,	3,323	3,262
Partners,	5,218	5,091
Average number of partners to a private firm,	1.57	1.56
Corporations,	1,225	1,272
Stockholders,	47,410	49,038
Average number of stockholders to a corporation,	38.70	38.55

Practically no change appears in the average number of partners to a private firm in 1900 and 1901, the averages being 1.57 and 1.56, respectively. The same is true of the average number of stockholders to a corporation, the average being 38.70 in 1900 and 38.55 in 1901.

Summarizing the facts, we find that in 1901 the returns represent 4,696 establishments classified in 80 industries. These establishments are conducted by 3,262 private firms, 1,272 corporations, and 20 industrial combinations, or, in other words, 71.63 per cent of the establishments are in the hands of private firms, 27.93 per cent are managed by corporations, and 0.44 per cent are controlled by industrial combinations. The private firms constitute 71.63 per cent of the total number of firms, corporations, and combinations, and are managed by 5,091 persons, of whom 94.83 per cent are males, 3.38 per cent are females, and 1.79 per cent are special partners and estates. The corporations are managed by 49,038 persons, of whom 55.79 per cent are males, 33.35 per cent are females, and 10.86 per cent are banks, trustees, etc. The industrial combinations form but 0.44 per cent of the total number of firms, corporations, and combinations. The average number of partners to a private firm is 1.56 and the average number of stockholders to a corporation, 38.55. Of the aggregate partners and stockholders, 59.46 per cent are males, 30.53 per cent are females, and 10.01 per cent are special partners, banks, etc.

Investment, Materials Used, and Product.

On the following pages are shown comparisons of the amount of capital devoted to production, the value of stock and materials used, and the value of goods made and work done in 4,696 identical establishments each making returns for the years 1900 and 1901.

The term "capital devoted to production" includes cash on hand and in bank, the value of land and buildings, when owned, the value of machinery, implements, and tools, when owned, and also the value of stock on hand in a raw state or in process of manufacture at the date of making the return. The last named element is, obviously, susceptible of wide variation from year to year. A small amount of stock on hand or in process of manufacture at the time the report is made would have the effect of showing a less amount devoted to production, and, on the other hand, an investment in materials purchased in a favorable market, the same being on hand at the time of making the return, would increase relatively the amount devoted to production and yet neither would affect the standing of the industry.

The term "stock used" includes all materials used in the establishment, whether entering into the construction of the article, or consumed in the processes necessary to the production of the finished goods. Increase or decrease in value, considered by itself, does not always indicate gain or loss in the *quantity* consumed or a corresponding increase or decrease in the *quantity* of goods made, it may mean simply a rise or fall in *values* and have no appreciable effect on the quantity.

The term "goods made and work done" is sufficiently explicit. The figures represent the gross selling value of the output in the establishments making return in the years 1900 and 1901.

The total number of establishments considered is 4,696 and the number in each industry may be found on pages 44 to 47; they are omitted in the tables which follow, owing to consideration of space.

CAPITAL DEVOTED TO PRODUCTION: BY INDUSTRIES.

1900, 1901.

[In this presentation, the figures given under "Amount of Capital Devoted to Production" represent the returns made by 4,696 identical establishments for the years 1900 and 1901. The number of establishments considered in each industry may be found in the presentation on pages 44 to 47. Comparison is made, as regards the amount of capital devoted to production, between the two years. The relative increase or decrease in 1901 as compared with 1900 is given with its equivalent percentage.]

Industries.	Amount of Capital Devoted to Production		Increase (+) or Decrease (−) in 1901	
	1900	1901	Amounts	Percentages
Agricultural implements,	$1,010,121	$1,077,879	+$67,758	+6.71
Arms and ammunition,	2,011,285	2,319,166	+307,881	+15.31
Artisans' tools,	3,254,862	3,175,307	−79,555	−2.44
Awnings, sails, tents, etc.,	193,029	190,194	−2,835	−1.47
Bicycles, tricycles, etc.,	1,424,563	1,420,001	−4,562	−0.32
Boots and shoes,	25,550,748	27,327,544	+1,776,796	+6.95
Boots and shoes (factory product),	22,053,166	23,617,639	+1,564,473	+7.09
Soles, heels, and cut stock,	2,944,538	3,102,123	+157,585	+5.35
Boot and shoe findings,	488,370	536,905	+48,535	+9.94
Stitching, heeling, etc.,	64,674	70,877	+6,203	+9.59
Boxes, barrels, kegs, etc.,	2,728,163	2,965,807	+237,644	+8.71
Boxes (paper),	1,179,958	1,169,234	−10,724	−0.91
Brick, tiles, and sewer pipe,	2,189,885	2,282,916	+93,031	+4.25
Brooms, brushes, and mops,	767,756	741,941	−25,815	−3.36
Building materials,	2,065,208	1,925,403	−139,805	−6.77
Burial cases, caskets, coffins, etc.,	155,888	149,067	−6,821	−4.38
Buttons and dress trimmings,	754,683	747,836	−6,847	−0.91
Carpetings,	6,045,740	5,957,590	−88,150	−1.46
Carriages and wagons,	2,367,293	2,496,449	+129,156	+5.46
Cement, kaolin, lime, and plaster,	115,316	131,797	+16,481	+14.29
Chemical preparations (compounded),	1,475,230	1,652,221	+176,991	+12.00
Clocks and watches,	4,822,818	5,361,077	+538,259	+11.16
Clothing,	5,634,048	6,182,666	+548,618	+9.74
Cooking, lighting, and heating apparatus,	1,570,169	1,472,110	−98,059	−6.25
Cordage and twine,	3,275,319	3,621,022	+345,703	+10.55
Cotton goods,	128,351,346	126,845,729	−1,505,617	−1.17
Cotton goods (woven),	101,491,784	100,425,670	−1,066,114	−1.05
Cotton yarn and thread,	26,216,882	25,764,747	−452,135	−1.72
Cotton waste,	642,680	655,312	+12,632	+1.97
Crayons, pencils, crucibles, etc.,	151,939	94,424	−57,515	−37.85
Drugs and medicines,	2,000,141	2,031,070	+30,929	+1.55
Dyestuffs,	547,566	525,137	−22,429	−4.10
Earthen, plaster, and stone ware,	247,241	217,360	−29,881	−12.09
Electrical apparatus and appliances,	4,877,743	5,718,042	+840,299	+17.23
Electroplating,	87,190	93,279	+6,089	+6.98
Emery and sand paper and cloth, etc.,	394,599	418,260	+23,661	+6.00
Fancy articles, etc.,	195,495	266,743	+71,248	+36.44
Fertilizers,	839,825	1,031,484	+191,659	+22.82
Fine arts and taxidermy,	32,100	37,200	+5,100	+15.89
Fireworks and matches,	53,181	49,254	−3,927	−7.38
Flax, hemp, and jute goods,	2,293,768	2,449,440	+155,672	+6.79
Food preparations,	19,125,027	19,346,117	+221,090	+1.16
Furniture,	7,781,239	8,061,314	+280,075	+3.60

CAPITAL DEVOTED TO PRODUCTION: BY INDUSTRIES — **1900, 1901** — Concluded.

Industries.	Amount of Capital Devoted to Production		Increase (+) or Decrease (−) in 1901	
	1900	1901	Amounts	Percentages
Glass,	$166,029	$172,746	+$6,717	+4.05
Glue, isinglass, and starch,	1,172,806	1,189,652	+16,846	+1.44
Hair work (animal and human),	151,592	127,133	−24,459	−16.13
Hose and belting: rubber, linen, etc.,	109,937	131,047	+21,110	+19.20
Hosiery and knit goods,	4,490,919	4,484,283	−6,636	−0.15
Ink, mucilage, and paste,	84,354	94,327	+9,973	+11.82
Ivory, bone, shell, and horn goods, etc.,	817,251	882,589	+65,338	+7.99
Jewelry,	3,466,854	3,644,532	+177,678	+5.13
Leather,	7,798,458	8,705,176	+906,718	+11.63
Leather goods,	1,806,998	2,019,003	+212,005	+11.73
Liquors (bottled) and carbonated beverages,	437,612	606,069	+168,457	+38.49
Liquors (malt),	14,670,135	14,887,361	+217,226	+1.48
Liquors (distilled),	454,235	447,290	−6,945	−1.53
Lumber,	954,905	961,669	+6,764	+0.71
Machines and machinery,	38,389,950	40,707,639	+2,317,689	+6.04
Metals and metallic goods,	22,858,783	23,793,479	+934,696	+4.09
Models, lasts, and patterns,	812,848	818,644	+5,796	+0.71
Musical instruments and materials,	3,744,235	4,088,382	+344,147	+9.19
Oils and illuminating fluids,	504,724	583,571	+78,847	+15.62
Paints, colors, and crude chemicals,	748,671	755,249	+6,578	+0.88
Paper,	19,826,756	20,012,943	+186,187	+0.94
Paper goods,	4,216,313	5,198,339	+982,026	+23.29
Perfumes, toilet articles, etc.,	27,135	26,913	−222	−0.82
Photographs and photographic materials,	340,685	213,842	−126,843	−37.23
Polishes and dressing,	607,064	649,322	+42,258	+6.96
Printing, publishing, and bookbinding,	6,552,501	7,035,165	+482,664	+7.37
Print works, dye works, and bleacheries,	13,663,377	14,693,239	+1,029,862	+7.54
Railroad construction and equipment,	2,005,758	2,011,070	+5,312	+0.26
Rubber and elastic goods,	14,062,929	15,894,533	+1,831,604	+13.02
Saddlery and harness,	276,724	259,180	−17,544	−6.34
Scientific instruments and appliances,	1,243,625	1,330,311	+86,686	+6.97
Shipbuilding,	3,183,198	3,799,432	+616,234	+19.36
Silk and silk goods,	2,200,041	2,297,136	+97,095	+4.41
Sporting and athletic goods,	248,653	312,922	+64,269	+25.85
Stone,	4,300,227	5,765,293	+1,465,066	+34.07
Quarried,	2,605,646	4,040,197	+1,434,551	+55.06
Cut and monumental,	1,694,581	1,725,096	+30,515	+1.80
Straw and palm leaf goods,	2,292,362	2,221,755	−70,607	−3.08
Tallow, candles, soap, and grease,	2,325,412	2,533,940	+208,528	+8.97
Tobacco, snuff, and cigars,	1,112,614	1,155,637	+43,023	+3.87
Toys and games (children's),	442,453	469,942	+27,489	+6.21
Trunks and valises,	49,751	44,890	−4,861	−9.77
Whips, lashes, and stocks,	452,908	464,469	+11,561	+2.55
Wooden goods,	1,369,719	1,410,365	+40,646	+2.97
Woollen goods,	26,500,393	25,791,680	−708,713	−2.67
Woven goods and yarn,	25,411,614	24,673,740	−737,874	−2.90
Shoddy, waste, etc.,	1,088,779	1,117,940	+29,161	+2.68
Worsted goods,	15,588,639	15,831,665	+243,026	+1.56
All Industries,	$462,101,015	$478,075,904	+$15,974,889	+3.46

STOCK USED: BY INDUSTRIES.

1900, 1901.

[In this presentation, the figures given under "Value of Stock and Materials Used" represent the returns made by 4,696 identical establishments for the years 1900 and 1901. The number of establishments considered in each industry may be found in the presentation on pages 44 to 47. Comparison is made, as regards the amount of stock used, between the two years. The relative increase or decrease in 1901 as compared with 1900 is given with its equivalent percentage.]

Industries.	Value of Stock and Materials Used		Increase (+) or Decrease (−) in 1901	
	1900	1901	Amounts	Percentages
Agricultural implements,	$616,577	$545,978	−$70,599	−11.45
Arms and ammunition,	815,710	823,077	+7,367	+0.90
Artisans' tools,	1,267,359	1,247,898	−19,461	−1.54
Awnings, sails, tents, etc.,	400,046	367,709	−32,337	−8.08
Bicycles, tricycles, etc.,	763,932	578,110	−185,822	−24.32
Boots and shoes,	78,914,923	89,986,147	+11,071,224	+14.03
Boots and shoes (factory product),	66,061,783	75,571,467	+9,509,684	+14.40
Soles, heels, and cut stock,	11,767,962	13,178,423	+1,410,461	+11.99
Boot and shoe findings,	1,033,912	1,187,196	+153,284	+14.83
Stitching, heeling, etc.,	51,266	49,061	−2,205	−4.30
Boxes, barrels, kegs, etc.,	3,036,028	3,296,299	+260,271	+8.57
Boxes (paper),	1,183,055	1,231,799	+48,744	+4.12
Brick, tiles, and sewer pipe,	446,182	448,161	+1,979	+0.44
Brooms, brushes, and mops,	992,516	964,244	−28,272	−2.85
Building materials,	1,346,440	1,314,640	−31,800	−2.36
Burial cases, caskets, coffins, etc.,	143,259	155,475	+12,216	+8.53
Buttons and dress trimmings,	455,832	387,216	−68,616	−15.05
Carpetings,	5,351,326	4,702,924	−648,402	−12.12
Carriages and wagons,	1,782,126	1,758,324	−23,802	−1.34
Cement, kaolin, lime, and plaster,	113,676	126,916	+13,240	+11.65
Chemical preparations (compounded),	988,965	1,276,454	+287,489	+29.07
Clocks and watches,	572,664	696,030	+123,366	+21.54
Clothing,	13,154,685	12,685,198	−469,487	−3.57
Cooking, lighting, and heating apparatus,	1,027,709	1,118,053	+90,344	+8.79
Cordage and twine,	6,060,594	6,434,911	+374,317	+6.18
Cotton goods,	65,573,721	69,529,298	+3,955,577	+6.03
Cotton goods (woven),	51,915,691	57,738,569	+5,822,878	+11.22
Cotton yarn and thread,	11,950,863	10,095,383	−1,855,480	−15.53
Cotton waste,	1,707,167	1,695,346	−11,821	−0.69
Crayons, pencils, crucibles, etc.,	73,330	60,740	−12,590	−17.17
Drugs and medicines,	1,690,237	1,755,893	+65,656	+3.88
Dyestuffs,	286,860	287,630	+770	+0.27
Earthen, plaster, and stone ware,	78,980	96,809	+17,829	+22.57
Electrical apparatus and appliances,	5,687,955	6,422,963	+735,008	+12.92
Electroplating,	49,948	44,870	−5,078	−10.17
Emery and sand paper and cloth, etc.,	202,138	238,013	+35,875	+17.75
Fancy articles, etc.,	321,102	422,541	+101,439	+31.59
Fertilizers,	1,090,000	1,184,320	+94,320	+8.65
Fine arts and taxidermy,	7,066	6,965	−101	−1.43
Fireworks and matches,	46,075	60,711	+14,636	+31.77
Flax, hemp, and jute goods,	2,603,483	3,476,160	+872,677	+33.52
Food preparations,	65,094,650	64,636,937	−457,713	−0.70
Furniture,	6,783,095	8,373,717	+1,590,622	+23.45

STOCK USED: BY INDUSTRIES — 1900, 1901 — Concluded.

Industries.	Value of Stock and Materials Used		Increase (+) or Decrease (—) in 1901	
	1900	1901	Amounts	Percentages
Glass,	$119,604	$125,099	+$5,495	+4.59
Glue, isinglass, and starch,	937,814	1,013,922	+76,108	+8.12
Hair work (animal and human),	287,481	261,469	—26,012	—9.05
Hose and belting: rubber, linen, etc.,	217,498	228,842	+11,344	+5.22
Hosiery and knit goods,	2,833,102	3,167,441	+334,339	+11.80
Ink, mucilage, and paste,	231,575	200,195	—31,380	—13.55
Ivory, bone, shell, and horn goods, etc.,	1,080,379	1,144,261	+63,882	+5.91
Jewelry,	4,216,966	4,028,832	—188,134	—4.46
Leather,	16,982,441	18,992,763	+2,010,322	+11.84
Leather goods,	2,035,910	2,152,227	+116,317	+5.71
Liquors (bottled) and carbonated beverages,	622,071	720,642	+98,571	+15.85
Liquors (malt),	2,748,568	3,043,122	+294,554	+10.72
Liquors (distilled),	1,696,299	1,642,127	—54,172	—3.19
Lumber,	1,282,970	1,306,317	+23,347	+1.82
Machines and machinery,	18,163,148	17,820,367	—342,781	—1.89
Metals and metallic goods,	21,976,723	24,785,236	+2,808,513	+12.78
Models, lasts, and patterns,	357,012	395,429	+38,417	+10.76
Musical instruments and materials,	2,396,312	2,581,499	+185,187	+7.73
Oils and illuminating fluids,	1,069,931	1,774,168	+704,237	+65.82
Paints, colors, and crude chemicals,	959,718	1,013,708	+53,990	+5.63
Paper,	12,573,366	13,605,791	+1,032,425	+8.21
Paper goods,	4,607,447	5,152,580	+545,133	+11.83
Perfumes, toilet articles, etc.,	148,625	155,016	+6,391	+4.30
Photographs and photographic materials,	311,327	343,463	+32,136	+10.32
Polishes and dressing,	1,265,760	1,445,063	+179,303	+14.17
Printing, publishing, and bookbinding,	2,406,253	2,597,162	+190,909	+7.93
Print works, dye works, and bleacheries,	20,466,321	19,905,777	—560,544	—2.74
Railroad construction and equipment,	2,252,742	2,083,898	—168,844	—7.50
Rubber and elastic goods,	16,917,786	17,494,983	+577,197	+3.41
Saddlery and harness,	707,300	672,042	—35,258	—4.98
Scientific instruments and appliances,	1,028,787	1,223,555	+194,768	+18.93
Shipbuilding,	1,270,890	1,656,072	+385,182	+30.31
Silk and silk goods,	3,296,959	3,261,224	—35,735	—1.08
Sporting and athletic goods,	242,089	349,785	+107,696	+44.49
Stone,	1,139,249	1,259,242	+119,993	+10.53
Quarried,	123,969	184,842	+60,873	+49.10
Cut and monumental,	1,015,280	1,074,400	+59,120	+5.82
Straw and palm leaf goods,	2,905,545	2,818,677	—86,868	—2.99
Tallow, candles, soap, and grease,	2,958,336	3,372,867	+414,531	+14.01
Tobacco, snuff, and cigars,	1,883,800	1,824,178	—59,622	—3.16
Toys and games (children's),	285,348	304,096	+18,748	+6.57
Trunks and valises,	72,757	78,719	+5,962	+8.19
Whips, lashes, and stocks,	520,313	492,850	—27,463	—5.28
Wooden goods,	1,119,128	1,130,154	+11,026	+0.99
Woollen goods,	23,887,476	24,194,838	+307,362	+1.29
Woven goods and yarn,	22,784,450	23,004,551	+220,101	+0.97
Shoddy, waste, etc.,	1,103,026	1,190,287	+87,261	+7.91
Worsted goods,	19,947,194	24,763,567	+4,816,373	+24.14
All Industries,	$471,452,564	$503,326,395	+$31,873,831	+6.76

GOODS MADE: BY INDUSTRIES.

1900, 1901.

[In this presentation, the figures given under "Value of Goods Made and Work Done" represent the returns made by 4,696 identical establishments for the years 1900 and 1901. The number of establishments considered in each industry may be found in the presentation on pages 44 to 47. Comparison is made, as regards value of goods made and work done, between the two years. The relative increase or decrease in 1901 as compared with 1900 is given with its equivalent percentage. These percentages, based upon returns from 4,696 typical establishments, may be considered a fair indication of the increase or decrease in value of product in the various industries for *all* the establishments in the State.]

Industries.	Value of Goods Made and Work Done		Increase (+) or Decrease (—) in 1901	
	1900	1901	Amounts	Percentages
Agricultural implements,	$1,308,292	$1,317,946	+$9,654	+0.74
Arms and ammunition,	2,759,076	3,824,233	+1,065,157	+38.61
Artisans' tools,	3,848,786	3,990,632	+141,846	+3.69
Awnings, sails, tents, etc.,	714,022	691,942	—22,080	—3.09
Bicycles, tricycles, etc.,	1,347,302	1,052,933	—294,369	—21.85
Boots and shoes,	125,471,177	142,275,334	+16,804,157	+13.39
Boots and shoes (factory product),	108,064,112	122,695,562	+14,631,450	+13.54
Soles, heels, and cut stock,	15,389,075	17,301,419	+1,912,344	+12.43
Boot and shoe findings,	1,696,028	1,961,096	+265,068	+15.63
Stitching, heeling, etc.,	321,962	317,257	—4,705	—1.46
Boxes, barrels, kegs, etc.,	5,644,205	6,140,785	+496,580	+8.80
Boxes (paper),	2,667,153	2,879,433	+212,280	+7.96
Brick, tiles, and sewer pipe,	1,546,917	1,601,616	+54,699	+3.54
Brooms, brushes, and mops,	1,710,157	1,726,924	+16,767	+0.98
Building materials,	2,556,789	2,630,689	+73,900	+2.89
Burial cases, caskets, coffins, etc.,	335,267	354,558	+19,291	+5.75
Buttons and dress trimmings,	1,113,669	953,674	—159,995	—14.37
Carpetings,	8,398,602	8,211,483	—187,119	—2.23
Carriages and wagons,	4,095,349	4,209,193	+113,844	+2.78
Cement, kaolin, lime, and plaster,	252,898	326,930	+74,032	+29.27
Chemical preparations (compounded),	1,874,073	2,005,539	+131,466	+7.01
Clocks and watches,	4,220,062	3,555,209	—664,853	—15.75
Clothing,	23,271,352	23,430,691	+159,339	+0.68
Cooking, lighting, and heating apparatus,	3,071,998	3,353,953	+281,955	+9.18
Cordage and twine,	8,187,180	8,177,680	—9,500	—0.12
Cotton goods,	124,086,810	117,078,409	—7,008,401	—5.65
Cotton goods (woven),	101,015,822	98,697,782	—2,318,040	—2.29
Cotton yarn and thread,	21,033,495	16,315,040	—4,718,455	—22.43
Cotton waste,	2,037,493	2,065,587	+28,094	+1.38
Crayons, pencils, crucibles, etc.,	186,630	169,430	—17,200	—9.22
Drugs and medicines,	4,984,173	4,995,746	+11,573	+0.23
Dyestuffs,	428,603	455,188	+26,585	+6.20
Earthen, plaster, and stone ware,	288,224	328,302	+40,078	+13.91
Electrical apparatus and appliances,	11,279,255	11,898,151	+618,896	+5.49
Electroplating,	174,013	169,021	—4,992	—2.87
Emery and sand paper and cloth, etc.,	769,809	792,510	+22,701	+2.95
Fancy articles, etc.,	712,623	854,191	+141,568	+19.87
Fertilizers,	1,726,947	1,918,438	+191,491	+11.09
Fine arts and taxidermy,	47,634	45,272	—2,362	—4.96
Fireworks and matches,	132,765	152,799	+20,034	+15.09
Flax, hemp, and jute goods,	4,882,405	5,145,716	+263,311	+5.39
Food preparations,	79,038,774	80,636,549	+1,597,775	+2.02
Furniture,	13,039,464	13,778,673	+739,209	+5.67

GOODS MADE: BY INDUSTRIES — **1900, 1901** — Concluded.

Industries.	Value of Goods Made and Work Done		Increase (+) or Decrease (−) in 1901	
	1900	1901	Amounts	Percentages
Glass,	$364,349	$368,193	+$3,844	+1.06
Glue, isinglass, and starch,	1,387,973	1,442,001	+54,028	+3.89
Hair work (animal and human),	371,931	341,283	−30,648	−8.24
Hose and belting: rubber, linen, etc.,	339,253	368,082	+28,829	+8.50
Hosiery and knit goods,	6,400,655	7,288,934	+888,279	+13.88
Ink, mucilage, and paste,	515,183	576,520	+61,337	+11.91
Ivory, bone, shell, and horn goods, etc.,	2,237,426	2,377,768	+140,342	+6.27
Jewelry,	9,822,502	9,989,470	+166,968	+1.70
Leather,	22,355,846	25,896,712	+3,540,866	+15.84
Leather goods,	3,476,225	3,645,440	+169,215	+4.87
Liquors (bottled) and carbonated beverages,	1,041,758	1,148,656	+106,898	+10.26
Liquors (malt),	11,901,161	11,583,541	−317,620	−2.67
Liquors (distilled),	2,852,182	2,969,024	+116,842	+4.10
Lumber,	2,041,985	2,266,928	+224,943	+11.02
Machines and machinery,	49,260,905	49,136,267	−124,638	−0.25
Metals and metallic goods,	41,011,205	46,753,140	+5,741,935	+14.00
Models, lasts, and patterns,	1,212,053	1,360,067	+148,014	+12.21
Musical instruments and materials,	6,434,749	7,107,739	+672,990	+10.46
Oils and illuminating fluids,	1,334,461	2,191,882	+857,421	+64.25
Paints, colors, and crude chemicals,	1,658,602	1,756,057	+97,455	+5.88
Paper,	21,335,119	24,344,202	+2,509,083	+11.49
Paper goods,	7,796,912	8,789,367	+992,455	+12.73
Perfumes, toilet articles, etc.,	183,532	191,268	+7,736	+4.22
Photographs and photographic materials,	635,537	646,664	+11,127	+1.75
Polishes and dressing,	2,215,182	2,547,919	+332,737	+15.02
Printing, publishing, and bookbinding,	9,302,261	9,779,985	+477,724	+5.14
Print works, dye works, and bleacheries,	27,344,170	27,084,794	−259,376	−0.95
Railroad construction and equipment,	4,135,630	3,908,080	−227,550	−5.50
Rubber and elastic goods,	31,123,230	32,613,258	+1,490,028	+4.79
Saddlery and harness,	1,106,779	1,036,498	−70,281	−6.35
Scientific instruments and appliances,	2,320,788	2,589,526	+268,738	+11.58
Shipbuilding,	2,629,646	3,590,161	+960,515	+36.53
Silk and silk goods,	4,910,375	5,243,678	+333,303	+6.79
Sporting and athletic goods,	592,643	731,339	+138,696	+23.40
Stone,	4,804,913	5,391,470	+586,557	+12.21
Quarried,	1,662,461	2,097,243	+434,782	+26.15
Cut and monumental,	3,142,452	3,294,227	+151,775	+4.83
Straw and palm leaf goods,	5,263,985	5,198,685	−65,300	−1.24
Tallow, candles, soap, and grease,	4,578,126	4,930,281	+352,155	+7.69
Tobacco, snuff, and cigars,	4,423,316	4,604,342	+181,026	+4.09
Toys and games (children's),	719,970	733,756	+13,786	+1.91
Trunks and valises,	170,459	181,851	+11,392	+6.68
Whips, lashes, and stocks,	1,206,024	1,265,001	+58,977	+4.89
Wooden goods,	2,378,971	2,404,711	+25,740	+1.08
Woollen goods,	40,865,404	42,594,922	+1,729,518	+4.23
Woven goods and yarn,	38,985,186	40,570,049	+1,584,863	+4.07
Shoddy, waste, etc.,	1,880,218	2,024,873	+144,655	+7.69
Worsted goods,	32,805,027	39,672,642	+6,867,615	+20.93
All Industries,	$825,540,858	$869,771,876	+$44,231,018	+5.36

Analysis.

On pages 61 and 62 is given the amount of capital devoted to production in the 4,696 establishments in each of the years 1900 and 1901. The total amount of capital in 1900 was $462,101,015, and in 1901, $478,075,904, an increase in the latter year of $15,974,889, or 3.46 per cent.

The term "capital" as used in these reports does not mean assets, and the figures as here presented are comparable only with others prepared upon a similar basis. Therefore, unwarranted deductions should not be made as regards increase or decrease in the amount of capital invested, nor should the returns as given in this volume be compared with those published in preceding years without consideration of all the elements involved. The comparisons in these abstracts are made upon the same basis each year, but each volume should be considered by itself.

In our consideration of capital devoted to production, we include the value of land, buildings, machinery, motive power, tools, and implements (if owned), patterns, patent rights, etc., the amount of cash on hand and in bank, and the raw stock and materials on hand or in process of manufacture at the date of making the return. The aggregate amounts given as capital devoted to production in the different industries, therefore, include the actual capital of all forms found in the industry at the time of making report.

Of the nine leading industries, six exhibit increases in capital devoted to production in 1901 as compared with 1900. They are as follows: Boots and Shoes, 6.95 per cent; Leather, 11.63 per cent; Machines and Machinery, 6.04 per cent; Metals and Metallic Goods, 4.09 per cent; Paper, 0.94 per cent; and Worsted Goods, 1.56 per cent.

Three of the nine leading industries show decreases in the amount of capital devoted to production in 1901 as compared with 1900. They are: Carpetings, 1.46 per cent; Cotton Goods, 1.17 per cent; and Woollen Goods, 2.67 per cent.

On pages 63 and 64 is presented a comparison of the value of the stock and materials used in the 4,696 establishments

during each of the years 1900 and 1901. The aggregate value in 1900 was $471,452,564, and in 1901, $503,326,395, an increase in the latter year of $31,873,831, or 6.76 per cent.

Seven of the nine leading industries show percentages of increase in 1901 as against 1900 as follows: Boots and Shoes, 14.03; Cotton Goods, 6.03; Leather, 11.84; Metals and Metallic Goods, 12.78; Paper, 8.21; Woollen Goods, 1.29; and Worsted Goods, 24.14.

Two of the leading industries show decreases in the value of stock and materials used in 1901 as compared with 1900, namely, Carpetings, 12.12 per cent, and Machines and Machinery, 1.89 per cent.

The presentation on pages 65 and 66 exhibits a comparison of the value of goods made and work done in the 4,696 establishments, each of which made returns in 1900 and 1901. The total value of goods made and work done in 1900 was $825,540,858, and in 1901, $869,771,876, an increase in the last named year of $44,231,018, or 5.36 per cent.

Sixty-three of the 80 classified industries show increases in value of goods made and work done in 1901 as against 1900, the range of increase being from 0.23 per cent in Drugs and Medicines to 64.25 per cent in Oils and Illuminating Fluids. The aggregate value of product in the 63 industries showing increase was, in 1900, $577,680,373, and in 1901, $631,377,675, a gain of $53,697,302, or 9.30 per cent.

Seventeen of the 80 classified industries show decreases in value of goods made and work done in 1901 as compared with 1900, the percentages of decrease ranging from 0.12 per cent in Cordage and Twine to 21.85 per cent in Bicycles, Tricycles, etc. The aggregate value of product in the 17 industries showing decrease in 1900 was $247,860,485, and in 1901, $238,394,201, a decrease of $9,466,284, or 3.82 per cent.

The following table presents a comparison of the value of goods made and work done for the nine leading industries:

Industries.	Value of Goods Made and Work Done		Increase (+) or Decrease (−) in 1901	
	1900	1901	Amounts	Percentages
Boots and shoes (aggregate),	$125,471,177	$142,275,334	+$16,804,157	+13.39
Factory product,	108,064,112	122,695,562	+14,631,450	+13.54
Soles, heels, and cut stock,	15,389,075	17,301,419	+1,912,344	+12.43
Findings,	1,696,028	1,961,096	+265,068	+15.63
Stitching, heeling, etc.,	321,962	317,257	−4,705	−1.46
Carpetings,	8,398,602	8,211,483	−187,119	−2.23
Cotton goods (aggregate),	124,086,810	117,078,409	−7,008,401	−5.65
Woven goods,	101,015,822	98,697,782	−2,318,040	−2.29
Yarn and thread,	21,033,495	16,315,040	−4,718,455	−22.43
Waste,	2,037,493	2,065,587	+28,094	+1.38
Leather,	22,355,846	25,896,712	+3,540,866	+15.84
Machines and machinery,	49,260,905	49,136,267	−124,638	−0.25
Metals and metallic goods,	41,011,205	46,753,140	+5,741,935	+14.00
Paper,	21,835,119	24,344,202	+2,509,083	+11.49
Woollen goods (aggregate),	40,865,404	42,594,922	+1,729,518	+4.23
Woven goods and yarn,	38,985,186	40,570,049	+1,584,863	+4.07
Shoddy, waste, etc.,	1,880,218	2,024,873	+144,655	+7.69
Worsted goods,	32,805,027	39,672,642	+6,867,615	+20.93
Nine industries,	466,090,095	495,963,111	+29,873,016	+6.41
Other industries,	359,450,763	373,808,765	+14,358,002	+3.99
All industries,	825,540,858	869,771,876	+44,231,018	+5.36

In 1900, the aggregate value of goods made and work done in the establishments compared in the nine leading industries was $466,090,095, and in 1901, $495,963,111, representing 56.46 per cent of the total value of goods made and work done in All Industries in 1900 and 57.02 per cent in 1901. Three of the leading industries, namely, Carpetings, Cotton Goods, and Machines and Machinery, show decreases in 1901 as compared with 1900.

The percentage of increase or decrease in the value of goods made and work done in these 4,696 establishments is typical of corresponding increase or decrease in all the establishments carrying on the entire manufacturing and mechanical industries in the Commonwealth. Although only a comparatively small number of establishments is shown in this annual comparison, the value of goods made in them represents over 80 per cent of the aggregate product value for the State in any year, and any fluctuation in employment or in output shown in these establishments would be reflected in the aggregate for all establishments were a complete canvass taken. Therefore, the per-

centages of increase or decrease shown in the presentation on pages 65 and 66, for each industry, may be taken as indicating the rate of increase or decrease of *all* the establishments in the specified industry.

In the following table, we bring the several industries into classified groups showing the value of goods made and work done in 1900 and 1901 and the percentages of increase or decrease in the later over the earlier year:

Manufactures: By Classified Industrial Groups.

Industrial Groups.	Value of Goods Made and Work Done		Percentages of Increase (+) or Decrease (−) in 1901
	1900	1901	
Animal.	$10,302,403	$11,009,771	+6.87
Fertilizers,	1,726,947	1,918,438	+11.09
Glue, isinglass, and starch,	1,387,973	1,442,001	+3.89
Hair work (animal and human),	371,931	341,283	−8.24
Ivory, bone, shell, and horn goods, etc.,	2,237,426	2,377,768	+6.27
Tallow, candles, soap, and grease,	4,578,126	4,930,281	+7.69
Chemical.	13,326,574	14,872,918	+11.60
Chemical preparations (compounded),	1,874,073	2,005,539	+7.01
Drugs and medicines,	4,984,173	4,995,746	+0.23
Fireworks and matches,	132,765	152,799	+15.09
Dyestuffs,	428,603	455,188	+6.20
Ink, mucilage, and paste,	515,183	576,520	+11.91
Oils and illuminating fluids,	1,334,461	2,191,882	+64.25
Paints, colors, and crude chemicals,	1,658,602	1,756,057	+5.88
Perfumes, toilet articles, etc.,	183,532	191,268	+4.22
Polishes and dressing,	2,215,182	2,547,919	+15.02
Food.	94,833,875	96,337,770	+1.59
Food preparations,	79,038,774	80,636,549	+2.02
Liquors (bottled) and carbonated beverages,	1,041,758	1,148,656	+10.26
Liquors (malt),	11,901,161	11,583,541	−2.67
Liquors (distilled),	2,852,182	2,969,024	+4.10
Leather.	152,410,027	172,853,984	+13.41
Boots and shoes,	125,471,177	142,275,334	+13.39
Leather,	22,355,846	25,896,712	+15.84
Leather goods,	3,476,225	3,645,440	+4.87
Saddlery and harness,	1,106,779	1,036,498	−6.35
Metal.	79,854,987	87,176,268	+9.17
Arms and ammunition,	2,759,076	3,824,233	+38.61
Artisans' tools,	3,848,786	3,990,632	+3.69
Bicycles, tricycles, etc.,	1,347,302	1,052,933	−21.85
Clocks and watches,	4,220,062	3,555,209	−15.75
Cooking, lighting, and heating apparatus,	3,071,998	3,353,953	+9.18
Electrical apparatus and appliances,	11,279,255	11,898,151	+5.49
Electroplating,	174,013	169,021	−2.87
Jewelry,	9,822,502	9,989,470	+1.70

Manufactures: By Classified Industrial Groups — Continued.

Industrial Groups.	Value of Goods Made and Work Done		Percentages of Increase (+) or Decrease (—) in 1901
	1900	1901	
Metal — Con.			
Metals and metallic goods,	$41,011,205	$46,753,140	+14.00
Scientific instruments and appliances,	2,320,788	2,589,526	+11.58
Metal and Wood.	82,116,088	84,408,126	+2.79
Agricultural implements,	1,308,292	1,317,946	+0.74
Carriages and wagons,	4,095,349	4,209,193	+2.78
Furniture,	13,039,464	13,778,673	+5.67
Machines and machinery,	49,260,905	49,136,267	—0.25
Models, lasts, and patterns,	1,212,053	1,360,067	+12.21
Musical instruments and materials,	6,434,749	7,107,739	+10.46
Railroad construction and equipment,	4,135,630	3,908,080	—5.50
Shipbuilding,	2,629,646	3,590,161	+36.53
Mineral.	8,213,740	8,978,451	+9.31
Brick, tiles, and sewer pipe,	1,546,917	1,601,616	+3.54
Cement, kaolin, lime, and plaster,	252,898	326,930	+29.27
Crayons, pencils, crucibles, etc.,	186,630	169,430	—9.22
Earthen, plaster, and stone ware,	288,224	328,302	+13.91
Emery and sand paper and cloth, etc.,	769,809	792,510	+2.95
Glass,	364,349	368,193	+1.06
Stone,	4,804,913	5,391,470	+12.21
Paper.	41,601,445	45,792,987	+10.08
Boxes (paper),	2,667,153	2,879,433	+7.96
Paper,	21,835,119	24,344,202	+11.49
Paper goods,	7,796,912	8,789,367	+12.73
Printing, publishing, and bookbinding,	9,302,261	9,779,985	+5.14
Rubber.	31,462,483	32,981,340	+4.83
Hose and belting: rubber, linen, etc.,	339,253	368,082	+8.50
Rubber and elastic goods,	31,123,230	32,613,258	+4.79
Textile.	282,979,671	285,574,565	+0.92
Awnings, sails, tents, etc.,	714,922	691,942	—3.09
Buttons and dress trimmings,	1,113,669	953,674	—14.37
Carpetings,	8,398,602	8,211,483	—2.23
Clothing,	23,271,352	23,430,691	+0.68
Cordage and twine,	8,187,180	8,177,680	—0.12
Cotton goods,	124,086,810	117,078,409	—5.65
Flax, hemp, and jute goods,	4,882,405	5,145,716	+5.39
Hosiery and knit goods,	6,400,655	7,288,934	+13.88
Print works, dye works, and bleacheries,	27,344,170	27,084,794	—0.95
Silk and silk goods,	4,910,375	5,243,678	+6.79
Woollen goods,	40,865,404	42,594,922	+4.23
Worsted goods,	32,805,027	39,672,642	+20.93
Wood.	12,957,217	13,797,671	+6.49
Boxes, barrels, kegs, etc.,	5,644,205	6,140,785	+8.80
Building materials,	2,556,789	2,630,689	+2.89
Burial cases, caskets, coffins, etc.,	335,267	354,558	+5.75
Lumber,	2,041,985	2,266,928	+11.02
Wooden goods,	2,378,971	2,404,711	+1.08

Manufactures: By Classified Industrial Groups — Concluded.

Industrial Groups.	Value of Goods Made and Work Done		Percentages of Increase (+) or Decrease (−) in 1901
	1900	1901	
Miscellaneous.	$15,482,348	$15,988,925	+3.27
Brooms, brushes, and mops,	1,710,157	1,726,924	+0.98
Fancy articles, etc.,	712,623	854,191	+19.87
Fine arts and taxidermy,	47,634	45,272	−4.96
Photographs and photographic materials,	635,537	646,664	+1.75
Sporting and athletic goods,	592,643	731,339	+23.40
Straw and palm leaf goods,	5,263,985	5,198,685	−1.24
Tobacco, snuff, and cigars,	4,423,316	4,604,342	+4.09
Toys and games (children's),	719,970	733,756	+1.91
Trunks and valises,	170,459	181,851	+6.68
Whips, lashes, and stocks,	1,206,024	1,265,001	+4.89

It will be seen from the above figures that the highest percentage of increase in 1901 as against 1900 appears in the Leather group. The Textile group shows in a marked degree the effect of the fluctuations in market values, the increase being but ninety-two one-hundredths of one per cent in 1901 as compared with 1900, yet the output of this group of industries exceeds that of any other and the value of product is about one-third of the aggregate product value of the State. None of the groups show a decrease in value of goods made in 1901 as compared with 1900.

Considering the value of stock and materials used in connection with the value of goods made and work done in the nine leading industries, we present the following table:

Industries.	Percentages of Increase (+) or Decrease (−) in 1901 in the Value of—	
	Stock Used	Goods Made
Boots and shoes,	+14.03	+13.39
Carpetings,	−12.12	−2.23
Cotton goods,	+6.03	−5.65
Leather,	+11.84	+15.84
Machines and machinery,	−1.89	−0.25
Metals and metallic goods,	+12.78	+14.00
Paper,	+8.21	+11.49
Woollen goods,	+1.29	+4.23
Worsted goods,	+24.14	+20.93

Percentages of increase and decrease in the cost value of stock used are accompanied by corresponding increase or

decrease in value of goods made in the above industries, except for Cotton Goods. Here we find that the value of stock used increased 6.03 per cent, while the value of goods made decreased 5.65 per cent. Confining our analysis to this industry, we find that out of 157 establishments, 66 show increases in the value of goods made in 1901 as against 1900. These establishments produced goods to the value of $44,139,621 in 1900, and in 1901, $48,754,297, an increase in the latter year of 10.45 per cent. Ninety-one establishments show decreases in value of product in 1901 as compared with 1900. The value of output in these establishments was $79,947,189 in 1900, and $68,324,112 in 1901, a decrease in the latter year of 14.54 per cent. The product of the 66 establishments showing increase represented 35.57 per cent of the aggregate value of goods made in this industry in 1900, and 41.64 per cent of the aggregate value in 1901.

The cost value of all stock and materials used, as stated above, shows an increase of 6.03 per cent. The cost of raw cotton, the principal article of stock, was in 1900, $0.08473, and in 1901, $0.09891 per pound, an increase in 1901 as compared with 1900 of 16.74 per cent. We find, too, that in 1901 less cotton was used than in 1900, the figures from 113 identical establishments making a report in both of the years being 479,768,354 pounds in 1900, as against 450,765,718 pounds in 1901. The cost value of same in 1900 was $40,648,725, and in 1901, $44,584,673. The quantity used shows a decrease of 6.05 per cent while the aggregate cost value shows an increase of 9.68 per cent.

Comparing those establishments which made a return of the kind and quantity of goods made in each of the years, we secure the following table:

Quantity and Value of Cotton Goods Made.

Kinds of Goods Made.	Basis of Measurement	Quantities		Aggregate Selling Values	
		1900	1901	1900	1901
Cotton cloth,	pounds	132,923,606	125,593,043	$32,846,617	$31,874,430
Dress goods,	pounds	12,329,821	12,129,163	2,694,488	2,901,446
Dress goods,	yards	137,345,426	175,293,897	8,512,414	9,859,285
Duck,	pounds	2,928,111	2,994,133	488,360	537,190
Fancy woven fabrics,	pounds	3,039,402	3,081,094	2,016,890	2,340,388
Fancy woven fabrics,	yards	11,256,780	13,432,861	1,231,044	1,505,624

Quantity and Value of Cotton Goods Made — Concluded.

Kinds of Goods Made.	Basis of Measurement	Quantities		Aggregate Selling Values	
		1900	1901	1900	1901
Flannel,	yards	51,144,567	53,814,200	$3,229,897	$3,096,508
Gingham,	pounds	6,542,704	6,345,227	2,408,016	2,468,147
Print cloth,	pounds	57,077,712	57,807,606	13,831,590	13,358,285
Sewing cotton,	dozen	11,268,172	11,735,688	2,544,440	2,440,224
Sheetings and shirtings,	pounds	33,245,241	31,188,467	6,962,675	6,937,572
Sheetings and shirtings,	yards	24,715,324	25,778,756	1,651,129	1,701,779
Ticks, denims, stripes, etc.,	pounds	20,601,615	20,268,376	4,254,112	4,196,744
Ticks, denims, stripes, etc.,	yards	19,561,480	19,929,058	1,356,956	1,503,232
Yarn,	pounds	68,551,314	60,991,139	17,006,012	13,712,820

It should be borne in mind that these reports are made by identical establishments. That is to say, 37 establishments reported the manufacture of 132,923,606 pounds of cotton cloth in 1900, valued at $32,846,617, and these same establishments returned an output of 125,593,043 pounds, valued at $31,874,430, in 1901.

In the next table, we show the average prices in 1900 and 1901 for each of the above named articles based upon the foregoing table.

Kinds of Goods Made.	Basis of Measurement	Average Selling Prices	
		1900	1901
Cotton cloth,	pounds	$0.24711	$0.25379
Dress goods,	pounds	0.21853	0.23921
Dress goods,	yards	0.06198	0.05624
Duck,	pounds	0.16678	0.17941
Fancy woven fabrics,	pounds	0.66358	0.75960
Fancy woven fabrics,	yards	0.10936	0.11209
Flannel,	yards	0.06315	0.05754
Gingham,	pounds	0.36805	0.38898
Print cloth,	pounds	0.24233	0.23108
Sewing cotton,	dozen	0.22581	0.20793
Sheetings and shirtings,	pounds	0.20943	0.22244
Sheetings and shirtings,	yards	0.06681	0.06601
Ticks, denims, stripes, etc.,	pounds	0.20649	0.20706
Ticks, denims, stripes, etc.,	yards	0.06937	0.07543
Yarn,	pounds	0.24808	0.22483

The average selling value of cotton cloth was a fraction less than 2½ cents per pound in 1900 and a fraction more than 2½ cents in 1901. Six of the articles show a lower average

selling value in 1901 than in 1900, and in the instance of cotton yarn the decrease is quite marked. The next table shows the percentages of increase or decrease in the quantity of goods manufactured, in total selling value, and in the average selling price per unit of measurement in 1901 as compared with 1900:

Kinds of Goods Made.	Basis of Measurement	Percentages of Increase (+) or Decrease (−) in 1901 as Compared with 1900 in —		
		Quantities	Aggregate Values	Average Prices
Cotton cloth,	pounds	−5.51	−2.96	+2.70
Dress goods,	pounds	−1.63	+7.68	+9.46
Dress goods,	yards	+27.63	+15.82	−9.26
Duck,	pounds	+2.25	+10.00	+7.57
Fancy woven fabrics,	pounds	+1.37	+16.04	+14.47
Fancy woven fabrics,	yards	+19.33	+22.30	+2.50
Flannel,	yards	+5.22	−4.13	−8.88
Gingham,	pounds	−3.02	+2.50	+5.69
Print cloth,	pounds	+1.28	−3.42	−4.64
Sewing cotton,	dozen	+4.15	−4.10	−7.92
Sheetings and shirtings,	pounds	−6.19	−0.36	+6.21
Sheetings and shirtings,	yards	+4.30	+3.07	−1.20
Ticks, denims, stripes, etc.,	pounds	−1.62	−1.35	+0.28
Ticks, denims, stripes, etc.,	yards	+1.88	+10.78	+8.74
Yarn,	pounds	−11.03	−19.36	−9.37

The proper method of reading this table is as follows: Those establishments producing cotton cloth turned out 5.51 per cent less in 1901 than in 1900 and received 2.96 per cent less in aggregate value although the average price per pound of product increased 2.70 per cent. Those establishments manufacturing dress goods by the yard produced 27.63 per cent more in 1901 than in 1900, received 15.82 per cent more in aggregate value, but the average selling value per yard decreased 9.26 per cent. Those establishments manufacturing cotton yarn produced 11.03 per cent less in 1901 than in 1900, received 19.36 per cent less in aggregate value, and the average selling value per pound decreased 9.37 per cent. Other lines may be read in a similar manner.

The value of the output in the establishments considered in the above table was $101,034,640 in 1900, and $98,433,674 in 1901, representing 81.42 per cent of the aggregate value of production in this industry in 1900 and 84.08 per cent in 1901.

Labor and its Compensation.

The statistical presentations under this subject head cover the persons employed in 4,696 industrial establishments for each of the years 1900 and 1901, as well as the total amount paid in wages, the average annual earnings, and a classification of the rates of weekly wages. It should be borne in mind that the persons enumerated are wage earners only; officers, clerks, salesmen, or other salaried persons are not included. The data are arranged as follows:

1. The average number of males and females employed for each of the years 1900 and 1901.

2. The average number of persons employed of both sexes, and the smallest and greatest number of persons employed at periods of employment of the smallest and greatest number. By the terms periods of employment of smallest number and periods of employment of greatest number are meant those times, as regards aggregate number of persons employed, when the smallest or greatest number, respectively, was employed.

3. The range of employment and unemployment in 1900 and 1901; that is to say, the difference between the greatest and the smallest number of persons employed, with the increase or decrease in "range" in 1901 as compared with 1900 expressed in numbers and percentages.

4. The aggregate number of persons employed of both sexes month by month during each of the years 1900 and 1901, together with the percentages of employment and unemployment for each of the nine leading industries and for All Industries.

5. The total amount paid in wages during each of the years 1900 and 1901 and the average yearly earnings for both years, based upon the average number of persons employed, without regard to sex or age, and the total amount paid in wages.

6. Classified weekly wages for the nine leading industries and for All Industries for adult males and females and for young persons irrespective of sex, for each of the years 1900 and 1901.

AVERAGE NUMBER OF PERSONS EMPLOYED: BY SEX AND INDUSTRIES.

1900, 1901.

[In this presentation, the average number of males, females, and both sexes for each industry is shown. The total number of establishments is 4,696, and the number of establishments in each industry is as given in the presentation on pages 44 to 47. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

Industries.	1900			1901		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Agricultural implements,	668	–	668	664	–	664
Arms and ammunition,	1,889	157	2,046	2,444	207	2,651
Artisans' tools,	2,405	48	2,453	2,569	49	2,618
Awnings, sails, tents, etc.,	188	75	263	202	76	278
Bicycles, tricycles, etc.,	746	17	763	658	13	671
Boots and shoes,	38,525	18,417	56,942	42,733	19,596	62,329
Boots and shoes (factory product),	34,919	16,203	51,122	38,863	17,455	56,318
Soles, heels, and cut stock,	3,054	1,478	4,532	3,283	1,376	4,659
Boot and shoe findings,	384	369	753	436	416	852
Stitching, heeling, etc.,	168	367	535	151	349	500
Boxes, barrels, kegs, etc.,	2,792	418	3,210	2,952	440	3,392
Boxes (paper),	710	1,708	2,418	731	1,819	2,550
Brick, tiles, and sewer pipe,	1,372	7	1,379	1,420	7	1,427
Brooms, brushes, and mops,	502	475	977	508	498	1,006
Building materials,	1,167	3	1,170	1,211	3	1,214
Burial cases, caskets, coffins, etc.,	154	20	174	163	20	183
Buttons and dress trimmings,	431	573	1,004	335	516	851
Carpetings,	2,158	2,172	4,330	2,275	2,298	4,573
Carriages and wagons,	1,961	18	1,979	1,972	19	1,991
Cement, kaolin, lime, and plaster,	129	–	129	159	–	159
Chemical preparations (compounded),	511	4	515	540	3	543
Clocks and watches,	1,304	1,668	2,972	1,484	1,822	3,306
Clothing,	3,160	7,464	10,624	3,232	7,599	10,831
Cooking, lighting, and heating apparatus,	1,800	13	1,813	1,830	11	1,841
Cordage and twine,	1,516	969	2,485	1,530	1,066	2,596
Cotton goods,	47,589	43,416	91,005	46,561	43,108	89,669
Cotton goods (woven),	41,456	37,948	79,404	40,878	37,565	78,443
Cotton yarn and thread,	5,869	5,328	11,197	5,409	5,403	10,812
Cotton waste,	264	140	404	274	140	414
Crayons, pencils, crucibles, etc.,	45	46	91	45	46	91
Drugs and medicines,	437	437	874	430	394	824
Dyestuffs,	92	29	121	94	21	115
Earthen, plaster, and stone ware,	163	35	198	183	37	220
Electrical apparatus and appliances,	4,585	919	5,504	5,076	1,014	6,090
Electroplating,	110	17	127	111	11	122
Emery and sand paper and cloth, etc.,	295	–	295	350	5	355
Fancy articles, etc.,	171	223	394	210	236	446
Fertilizers,	223	4	227	216	–	216
Fine arts and taxidermy,	23	–	23	23	1	24
Fireworks and matches,	63	22	85	78	24	102

AVERAGE NUMBER OF PERSONS EMPLOYED: BY SEX AND INDUSTRIES — 1900, 1901 — Concluded.

Industries.	1900			1901		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Flax, hemp, and jute goods,	1,422	1,525	2,947	1,526	1,719	3,245
Food preparations,	6,664	3,128	9,792	6,639	3,285	9,924
Furniture,	5,080	703	5,783	5,228	721	5,949
Glass,	269	16	285	269	17	286
Glue, isinglass, and starch,	358	43	401	364	50	414
Hair work (animal and human),	84	56	140	89	53	142
Hose and belting: rubber, linen, etc.,	38	32	70	39	43	82
Hosiery and knit goods,	1,982	4,864	6,846	2,120	4,888	7,008
Ink, mucilage, and paste,	40	42	82	44	52	96
Ivory, bone, shell, and horn goods, etc.,	1,210	217	1,427	1,137	245	1,382
Jewelry,	3,463	1,978	5,441	3,598	2,017	5,615
Leather,	5,823	60	5,883	6,507	94	6,601
Leather goods,	933	285	1,218	973	290	1,263
Liquors (bottled) and carbonated beverages,	196	8	204	205	6	211
Liquors (malt),	1,548	–	1,548	1,544	–	1,544
Liquors (distilled),	40	–	40	35	–	35
Lumber,	535	–	535	549	–	549
Machines and machinery,	27,991	341	28,332	27,154	354	27,508
Metals and metallic goods,	18,795	1,865	20,660	20,318	1,977	22,295
Models, lasts, and patterns,	601	8	609	629	7	636
Musical instruments and materials,	2,919	217	3,136	3,083	270	3,353
Oils and illuminating fluids,	109	12	121	128	9	137
Paints, colors, and crude chemicals,	235	22	257	245	20	265
Paper,	5,495	3,478	8,973	5,780	3,603	9,383
Paper goods,	1,666	2,019	3,685	1,796	2,077	3,873
Perfumes, toilet articles, etc.,	13	21	34	11	20	31
Photographs and photographic materials,	108	100	208	113	103	216
Polishes and dressing,	156	195	351	180	189	369
Printing, publishing, and bookbinding,	2,925	1,619	4,544	2,868	1,689	4,557
Print works, dye works, and bleacheries,	5,241	1,215	6,456	5,364	1,239	6,603
Railroad construction and equipment,	2,763	2	2,765	2,820	2	2,822
Rubber and elastic goods,	6,391	4,294	10,685	6,798	4,246	11,044
Saddlery and harness,	340	174	514	281	106	387
Scientific instruments and appliances,	1,299	376	1,675	1,299	408	1,707
Shipbuilding,	1,439	–	1,439	1,780	–	1,780
Silk and silk goods,	924	1,627	2,551	928	1,586	2,514
Sporting and athletic goods,	241	137	378	306	174	480
Stone,	4,231	–	4,231	4,634	–	4,634
Quarried,	2,224	–	2,224	2,475	–	2,475
Cut and monumental,	2,007	–	2,007	2,159	–	2,159
Straw and palm leaf goods,	1,037	1,823	2,860	1,031	1,820	2,851
Tallow, candles, soap, and grease,	789	95	884	824	92	916
Tobacco, snuff, and cigars,	1,667	692	2,359	1,689	724	2,413
Toys and games (children's),	429	105	534	435	100	535
Trunks and valises,	81	11	92	92	11	103
Whips, lashes, and stocks,	384	142	526	391	137	528
Wooden goods,	1,417	95	1,512	1,389	102	1,491
Woollen goods,	13,800	7,738	21,538	14,040	8,036	22,076
Woven goods and yarn,	13,194	7,659	20,853	13,383	7,960	21,343
Shoddy, waste, etc.,	606	79	685	657	76	733
Worsted goods,	7,627	6,667	14,294	9,063	7,133	16,196
All Industries,	258,682	127,421	386,103	269,324	130,673	399,997

SMALLEST, GREATEST, AND AVERAGE NUMBER OF PERSONS EMPLOYED: BY INDUSTRIES.

1900, 1901.

[This presentation shows the average number of persons employed, and the number of persons employed at periods of employment of smallest and greatest number, respectively. It should be borne in mind that the number of persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

Industries.	1900			1901		
	Average Number	Smallest Number	Greatest Number	Average Number	Smallest Number	Greatest Number
Agricultural implements,	668	556	712	664	568	742
Arms and ammunition,	2,046	1,650	2,480	2,651	1,794	3,217
Artisans' tools,	2,453	2,153	2,740	2,618	2,395	2,835
Awnings, sails, tents, etc.,	263	183	359	278	191	384
Bicycles, tricycles, etc.,	763	387	1,131	671	328	1,131
Boots and shoes,	56,942	44,906	68,054	62,329	50,867	73,431
Boots and shoes (factory product),	51,122	40,361	60,970	56,318	45,925	66,327
Soles, heels, and cut stock,	4,532	3,583	5,422	4,659	3,868	5,474
Boot and shoe findings,	753	587	930	852	667	1,007
Stitching, heeling, etc.,	535	375	732	500	407	623
Boxes, barrels, kegs, etc.,	3,210	2,818	3,663	3,392	3,005	3,804
Boxes (paper),	2,418	2,106	2,778	2,550	2,221	3,053
Brick, tiles, and sewer pipe,	1,379	676	2,494	1,427	652	2,494
Brooms, brushes, and mops,	977	875	1,094	1,006	911	1,132
Building materials,	1,170	979	1,379	1,214	988	1,486
Burial cases, caskets, coffins, etc.,	174	161	182	183	177	189
Buttons and dress trimmings,	1,004	816	1,189	851	668	1,005
Carpetings,	4,330	3,627	4,611	4,573	4,323	4,850
Carriages and wagons,	1,979	1,510	2,469	1,991	1,607	2,417
Cement, kaolin, lime, and plaster,	129	112	150	159	114	197
Chemical preparations (compounded),	515	463	560	543	478	648
Clocks and watches,	2,972	2,788	3,148	3,306	3,054	3,504
Clothing,	10,624	8,368	12,321	10,831	8,685	12,533
Cooking, lighting, and heating apparatus,	1,813	1,420	2,082	1,841	1,695	2,092
Cordage and twine,	2,485	2,088	2,760	2,596	2,156	2,958
Cotton goods,	91,005	84,598	95,486	89,669	80,423	95,762
Cotton goods (woven),	79,404	73,792	82,950	78,443	70,422	82,902
Cotton yarn and thread,	11,197	10,439	12,104	10,812	9,605	12,424
Cotton waste,	404	367	432	414	396	436
Crayons, pencils, crucibles, etc.,	91	65	115	91	69	111
Drugs and medicines,	874	527	1,222	824	555	1,210
Dyestuffs,	121	94	143	115	62	147
Earthen, plaster, and stone ware,	198	201	264	220	179	255
Electrical apparatus and appliances,	5,504	4,916	6,088	6,090	5,145	6,975
Electroplating,	127	103	152	122	103	147
Emery and sand paper and cloth, etc.,	295	278	316	355	312	387
Fancy articles, etc.,	394	169	690	446	239	672
Fertilizers,	227	137	386	216	189	283
Fine arts and taxidermy,	23	20	27	24	23	28
Fireworks and matches,	85	70	113	102	69	134

SMALLEST, GREATEST, AND AVERAGE NUMBER OF PERSONS EMPLOYED: BY INDUSTRIES — 1900, 1901 — Concluded.

Industries.	1900			1901		
	Average Number	Smallest Number	Greatest Number	Average Number	Smallest Number	Greatest Number
Flax, hemp, and jute goods,	2,947	2,593	3,242	3,245	3,080	3,379
Food preparations,	9,792	8,123	11,852	9,924	8,134	12,055
Furniture,	5,783	4,789	6,756	5,949	4,903	6,913
Glass,	285	144	353	286	182	332
Glue, isinglass, and starch,	401	304	633	414	337	638
Hair work (animal and human),	140	74	182	142	126	162
Hose and belting: rubber, linen, etc.,	70	58	77	82	63	87
Hosiery and knit goods,	6,846	6,153	7,500	7,008	6,282	7,723
Ink, mucilage, and paste,	82	69	99	96	72	128
Ivory, bone, shell, and horn goods, etc.,	1,427	1,187	1,747	1,382	1,118	1,687
Jewelry,	5,441	4,334	6,658	5,615	4,494	7,007
Leather,	5,883	4,584	7,106	6,601	5,551	7,582
Leather goods,	1,218	1,059	1,426	1,263	1,097	1,524
Liquors (bottled) and carbonated beverages,	204	141	294	211	155	307
Liquors (malt),	1,548	1,423	1,659	1,544	1,440	1,655
Liquors (distilled),	40	37	45	35	34	37
Lumber,	535	496	642	549	469	648
Machines and machinery,	28,332	24,154	31,906	27,508	23,279	31,695
Metals and metallic goods,	20,660	17,283	23,670	22,295	19,349	24,999
Models, lasts, and patterns,	609	510	721	636	527	764
Musical instruments and materials,	3,136	2,792	3,417	3,353	3,020	3,729
Oils and illuminating fluids,	121	102	139	137	116	153
Paints, colors, and crude chemicals,	257	227	284	265	236	284
Paper,	8,973	7,682	9,986	9,383	8,101	10,267
Paper goods,	3,685	3,316	4,019	3,873	3,422	4,341
Perfumes, toilet articles, etc.,	34	30	39	31	26	38
Photographs and photographic materials,	208	176	243	216	177	250
Polishes and dressing,	351	248	429	369	277	449
Printing, publishing, and bookbinding,	4,544	4,089	4,920	4,557	4,124	5,022
Print works, dye works, and bleacheries,	6,456	5,364	7,268	6,603	5,920	7,209
Railroad construction and equipment,	2,765	2,540	3,033	2,822	2,550	3,068
Rubber and elastic goods,	10,685	8,662	12,109	11,044	9,784	12,648
Saddlery and harness,	514	430	602	387	329	480
Scientific instruments and appliances,	1,675	1,556	1,776	1,707	1,548	1,912
Shipbuilding,	1,439	901	2,137	1,780	1,173	2,562
Silk and silk goods,	2,551	2,171	2,866	2,514	2,372	2,705
Sporting and athletic goods,	378	257	513	480	299	636
Stone,	4,231	2,291	5,922	4,634	3,213	6,219
Quarried,	2,224	1,154	3,178	2,475	1,613	3,486
Cut and monumental,	2,007	1,137	2,744	2,159	1,600	2,733
Straw and palm leaf goods,	2,860	707	4,843	2,851	796	4,795
Tallow, candles, soap, and grease,	884	785	977	916	835	993
Tobacco, snuff, and cigars,	2,359	2,008	2,634	2,413	2,106	2,777
Toys and games (children's),	534	349	717	535	355	741
Trunks and valises,	92	64	114	103	67	131
Whips, lashes, and stocks,	526	453	585	528	470	590
Wooden goods,	1,512	1,276	1,739	1,491	1,270	1,726
Woollen goods,	21,538	17,854	24,131	22,076	18,488	24,615
Woven goods and yarn,	20,853	17,385	23,220	21,343	17,928	23,665
Shoddy, waste, etc.,	685	469	911	733	560	950
Worsted goods,	14,294	8,535	16,995	16,196	13,394	18,262
All Industries,	386,103	322,200	440,363	399,997	339,405	456,137

RANGE OF EMPLOYMENT AND UNEMPLOYMENT: BY INDUSTRIES.

1900, 1901.

[In this presentation, the excess of greatest over smallest number of persons, as obtained from the tables on pages 79 and 80, is shown, and a comparison is made between the two years. The relative increase or decrease in the excess of greatest over smallest number employed in 1901 as compared with 1900 is given with its equivalent percentage. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

Industries.	Excess of Greatest Over Smallest Number of Persons Employed		Increase (+) or Decrease (−) in 1901	
	1900	1901	Number	Percentages
Agricultural implements,	156	174	+18	+11.54
Arms and ammunition,	830	1,423	+593	+71.45
Artisans' tools,	587	440	−147	−25.04
Awnings, sails, tents, etc.,	176	193	+17	+9.66
Bicycles, tricycles, etc.,	744	803	+59	+7.93
Boots and shoes,	23,148	22,564	−584	−2.52
Boots and shoes (factory product),	20,609	20,402	−207	−1.00
Soles, heels, and cut stock,	1,839	1,606	−233	−12.67
Boot and shoe findings,	343	340	−3	−0.88
Stitching, heeling, etc.,	357	216	−141	−39.50
Boxes, barrels, kegs, etc.,	845	799	−46	−5.44
Boxes (paper),	672	832	+160	+23.81
Brick, tiles, and sewer pipe,	1,818	1,842	+24	+1.32
Brooms, brushes, and mops,	219	221	+2	+0.91
Building materials,	400	498	+98	+24.50
Burial cases, caskets, coffins, etc.,	21	12	−9	−42.86
Buttons and dress trimmings,	373	337	−36	−9.65
Carpetings,	984	527	−457	−46.44
Carriages and wagons,	959	810	−149	−15.54
Cement, kaolin, lime, and plaster,	38	83	+45	+118.42
Chemical preparations (compounded),	97	170	+73	+75.26
Clocks and watches,	360	450	+90	+25.00
Clothing,	3,953	3,848	−105	−2.66
Cooking, lighting, and heating apparatus,	662	397	−265	−40.03
Cordage and twine,	672	802	+130	+19.35
Cotton goods,	10,888	15,339	+4,451	+40.88
Cotton goods (woven),	9,158	12,480	+3,322	+36.27
Cotton yarn and thread,	1,665	2,819	+1,154	+69.31
Cotton waste,	65	40	−25	−38.46
Crayons, pencils, crucibles, etc.,	50	42	−8	−16.00
Drugs and medicines,	695	655	−40	−5.76
Dyestuffs,	49	85	+36	+73.47
Earthen, plaster, and stone ware,	63	76	+13	+20.63
Electrical apparatus and appliances,	1,172	1,830	+658	+56.14
Electroplating,	49	44	−5	−10.20
Emery and sand paper and cloth, etc.,	38	75	+37	+97.37
Fancy articles, etc.,	521	433	−88	−16.89
Fertilizers,	249	94	−155	−62.25
Fine arts and taxidermy,	7	5	−2	−28.57
Fireworks and matches,	43	65	+22	+51.16

RANGE OF EMPLOYMENT AND UNEMPLOYMENT: BY INDUSTRIES — 1900, 1901 — Concluded.

Industries.	Excess of Greatest Over Smallest Number of Persons Employed		Increase (+) or Decrease (−) in 1901	
	1900	1901	Number	Percentages
Flax, hemp, and jute goods,	649	299	−350	−53.93
Food preparations,	3,729	3,921	+192	+5.15
Furniture,	1,967	2,010	+43	+2.19
Glass,	209	150	−59	−28.23
Glue, isinglass, and starch,	329	301	−28	−8.51
Hair work (animal and human),	108	36	−72	−66.67
Hose and belting: rubber, linen, etc.,	19	24	+5	+26.32
Hosiery and knit goods,	1,347	1,441	+94	+6.98
Ink, mucilage, and paste,	30	56	+26	+86.67
Ivory, bone, shell, and horn goods, etc.,	560	569	+9	+1.61
Jewelry,	2,324	2,513	+189	+8.13
Leather,	2,522	2,031	−491	−19.47
Leather goods,	367	427	+60	+16.35
Liquors (bottled) and carbonated beverages,	153	152	−1	−0.65
Liquors (malt),	236	215	−21	−8.90
Liquors (distilled),	8	3	−5	−62.50
Lumber,	146	179	+33	+22.60
Machines and machinery,	7,752	8,416	+664	+8.57
Metals and metallic goods,	6,387	5,650	−737	−11.54
Models, lasts, and patterns,	211	237	+26	+12.32
Musical instruments and materials,	625	709	+84	+13.44
Oils and illuminating fluids,	37	37	-	-
Paints, colors, and crude chemicals,	57	48	−9	−15.79
Paper,	2,304	2,166	−138	−5.99
Paper goods,	703	919	+216	+30.73
Perfumes, toilet articles, etc.,	9	12	+3	+33.33
Photographs and photographic materials,	67	73	+6	+8.96
Polishes and dressing,	181	172	−9	−4.97
Printing, publishing, and bookbinding,	831	898	+67	+8.06
Print works, dye works, and bleacheries,	1,904	1,289	−615	−32.30
Railroad construction and equipment,	493	518	+25	+5.07
Rubber and elastic goods,	3,447	2,864	−583	−16.91
Saddlery and harness,	172	151	−21	−12.21
Scientific instruments and appliances,	220	364	+144	+65.45
Shipbuilding,	1,236	1,389	+153	+12.38
Silk and silk goods,	695	333	−362	−52.09
Sporting and athletic goods,	256	337	+81	+31.64
Stone,	3,631	3,006	−625	−17.21
Quarried,	2,024	1,873	−151	−7.46
Cut and monumental,	1,607	1,133	−474	−29.50
Straw and palm leaf goods,	4,136	3,999	−137	−3.31
Tallow, candles, soap, and grease,	192	158	−34	−17.71
Tobacco, snuff, and cigars,	626	671	+45	+7.19
Toys and games (children's),	368	386	+18	+4.89
Trunks and valises,	50	64	+14	+28.00
Whips, lashes, and stocks,	132	120	−12	−9.09
Wooden goods,	463	456	−7	−1.51
Woollen goods,	6,277	6,127	−150	−2.39
Woven goods and yarn,	5,835	5,737	−98	−1.68
Shoddy, waste, etc.,	442	390	−52	−11.76
Worsted goods,	8,460	4,868	−3,592	−42.46
All Industries,	118,163	116,732	−1,431	−1.21

PERSONS EMPLOYED—BOTH SEXES. AGGREGATES, BY MONTHS.

1900, 1901.

[This presentation shows, for the nine leading industries and for All Industries, the aggregate number of persons employed during each month of the years 1900 and 1901, together with percentages of employment and unemployment based on the month when the greatest number of persons was employed; this greatest number has been considered as 100 per cent and the variations from this percentage month by month indicate the fluctuations in employment. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included. Considerations of space have led to the curtailment of the presentation to the nine leading industries, but the figures in detail for any of the 80 classified industries may be obtained upon application to this Department.]

Industries and Months.	1900			1901		
	Number of Persons Employed in Establishments Considered	Percentages of—		Number of Persons Employed in Establishments Considered	Percentages of—	
		Employment	Unemployment		Employment	Unemployment
Boots and Shoes.						
January,	58,586	98.03	1.97	61,003	95.34	4.66
February,	59,441	99.46	0.54	61,792	96.57	3.43
March,	59,765	100.00	–	63,036	98.52	1.48
April,	57,203	95.71	4.29	61,561	96.21	3.79
May,	55,739	93.26	6.74	61,208	95.66	4.34
June,	53,508	89.53	10.47	60,099	93.93	6.07
July,	52,468	87.79	12.21	60,170	94.04	5.96
August,	56,047	93.78	6.22	63,331	98.98	1.02
September,	57,106	95.55	4.45	63,986	100.00	–
October,	57,211	95.73	4.27	63,644	99.47	0.53
November,	57,543	96.28	3.72	63,889	99.85	0.15
December,	58,062	97.15	2.85	63,340	98.99	1.01
Carpetings.						
January,	4,504	99.32	0.68	4,614	96.19	3.81
February,	4,491	99.03	0.97	4,600	95.89	4.11
March,	4,267	94.09	5.91	4,500	93.81	6.19
April,	3,759	82.89	17.11	4,360	90.89	9.11
May,	4,371	96.38	3.62	4,469	93.16	6.84
June,	4,484	98.88	1.12	4,529	94.41	5.59
July,	4,438	97.86	2.14	4,562	95.10	4.90
August,	4,500	99.23	0.77	4,505	93.91	6.09
September,	4,535	100.00	–	4,585	95.58	4.42
October,	3,803	83.86	16.14	4,685	97.67	2.33
November,	4,315	95.15	4.85	4,670	97.35	2.65
December,	4,486	98.92	1.08	4,797	100.00	–
Cotton Goods.						
January,	90,681	98.23	1.77	91,618	98.28	1.72
February,	91,196	98.79	1.21	91,483	98.14	1.86
March,	92,311	100.00	–	91,588	98.25	1.75
April,	91,414	99.03	0.97	85,602	91.83	8.17
May,	91,352	98.96	1.04	87,989	94.39	5.61
June,	91,879	99.53	0.47	88,177	94.59	5.41
July,	90,527	98.07	1.93	86,957	93.28	6.72
August,	88,788	96.18	3.82	88,241	94.66	5.34
September,	89,065	96.48	3.52	88,668	95.12	4.88
October,	90,695	98.25	1.75	89,776	96.30	3.70
November,	91,720	99.36	0.64	93,221	100.00	–
December,	92,285	99.97	0.03	92,613	99.35	0.65

PERSONS EMPLOYED — BOTH SEXES. AGGREGATES, BY MONTHS — **1900, 1901** — Continued.

Industries and Months.	1900			1901		
	Number of Persons Employed in Establishments Considered	Percentages of —		Number of Persons Employed in Establishments Considered	Percentages of —	
		Employment	Unemployment		Employment	Unemployment
Leather.						
January,	6,232	100.00	–	6,445	94.68	5.32
February,	6,146	98.62	1.38	6,517	95.74	4.26
March,	6,226	99.90	0.10	6,575	96.59	3.41
April,	5,960	95.64	4.36	6,492	95.37	4.63
May,	5,900	94.67	5.33	6,556	96.31	3.69
June,	5,566	89.31	10.69	6,580	96.67	3.33
July,	5,493	88.14	11.86	6,587	96.77	3.23
August,	5,586	89.63	10.37	6,677	98.09	1.91
September,	5,741	92.12	7.88	6,592	96.84	3.16
October,	5,693	91.35	8.65	6,663	97.88	2.12
November,	5,772	92.62	7.38	6,688	98.25	1.75
December,	5,993	96.16	3.84	6,807	100.00	–
Machines and Machinery.						
January,	27,306	95.40	4.60	28,825	100.00	–
February,	27,936	97.60	2.40	28,568	99.11	0.89
March,	28,431	99.33	0.67	27,912	96.83	3.17
April,	28,030	97.92	2.08	27,590	95.72	4.28
May,	28,430	99.32	0.68	26,908	93.35	6.65
June,	28,624	100.00	–	25,982	90.14	9.86
July,	28,477	99.49	0.51	26,604	92.29	7.71
August,	28,452	99.40	0.60	27,031	93.78	6.22
September,	28,524	99.65	0.35	27,438	95.19	4.81
October,	28,600	99.92	0.08	27,755	96.29	3.71
November,	28,604	99.93	0.07	27,691	96.07	3.93
December,	28,321	98.94	1.06	27,588	95.71	4.29
Metals and Metallic Goods.						
January,	21,565	99.23	0.77	21,297	91.71	8.29
February,	21,732	100.00	–	21,395	92.13	7.87
March,	21,544	99.13	0.87	21,658	93.26	6.74
April,	21,331	98.15	1.85	22,054	94.97	5.03
May,	21,028	96.76	3.24	22,272	95.90	4.10
June,	20,515	94.40	5.60	22,172	95.47	4.53
July,	19,258	88.62	11.38	21,877	94.20	5.80
August,	19,173	88.22	11.78	22,338	96.19	3.81
September,	19,666	90.49	9.51	22,872	98.49	1.51
October,	20,441	94.06	5.94	23,223	100.00	–
November,	20,759	95.52	4.48	23,074	99.36	0.64
December,	20,738	95.43	4.57	23,013	99.10	0.90
Paper.						
January,	8,709	93.31	6.69	9,098	92.61	7.39
February,	9,333	100.00	–	9,244	94.10	5.90
March,	9,312	99.77	0.23	9,313	94.80	5.20
April,	9,267	99.29	0.71	9,316	94.83	5.17
May,	9,158	98.12	1.88	9,408	95.77	4.23
June,	8,899	95.35	4.65	8,769	89.26	10.74
July,	8,517	91.26	8.74	9,243	94.09	5.91
August,	8,385	89.84	10.16	9,318	94.85	5.15
September,	8,742	93.67	6.33	9,591	97.63	2.37
October,	9,040	96.86	3.14	9,666	98.39	1.61
November,	9,078	97.27	2.73	9,745	99.20	0.80
December,	9,152	98.06	1.94	9,824	100.00	–
Woollen Goods.						
January,	22,141	98.57	1.43	21,567	94.36	5.64
February,	22,206	98.86	1.14	21,442	93.82	6.18
March,	22,462	100.00	–	22,036	96.42	3.58
April,	22,248	99.05	0.95	22,062	96.53	3.47
May,	22,207	98.86	1.14	21,955	96.06	3.94
June,	21,894	97.47	2.53	21,950	96.04	3.96
July,	21,072	93.81	6.19	22,339	97.74	2.26
August,	20,437	90.98	9.02	20,956	91.69	8.31
September,	20,380	90.73	9.27	22,255	97.37	2.63
October,	21,102	93.95	6.05	22,768	99.62	0.38
November,	20,978	93.39	6.61	22,558	98.70	1.30
December,	21,185	94.31	5.69	22,855	100.00	–

PERSONS EMPLOYED — BOTH SEXES. AGGREGATES, BY MONTHS — **1900, 1901** — Concluded.

Industries and Months.	1900			1901		
	Number of Persons Employed in Establishments Considered	Percentages of —		Number of Persons Employed in Establishments Considered	Percentages of —	
		Employment	Unemployment		Employment	Unemployment
Worsted Goods.						
January,	15,838	96.52	3.48	13,959	78.18	21.82
February,	16,110	98.18	1.82	14,592	81.72	18.28
March,	16,381	99.83	0.17	15,443	86.49	13.51
April,	16,409	100.00	–	16,136	90.37	9.63
May,	15,999	97.50	2.50	16,449	92.12	7.88
June,	14,743	89.85	10.15	16,461	92.19	7.81
July,	9,794	59.69	40.31	16,271	91.12	8.88
August,	13,079	79.71	20.29	16,411	91.91	8.09
September,	13,336	81.27	18.73	16,790	94.03	5.97
October,	12,828	78.18	21.82	17,297	96.87	3.13
November,	12,795	77.98	22.02	17,856	100.00	–
December,	14,206	86.57	13.43	16,718	93.63	6.37
All Industries.						
January,	389,107	98.46	1.54	393,625	94.78	5.22
February,	393,275	99.52	0.48	395,334	95.19	4.81
March,	395,188	100.00	–	400,078	96.33	3.67
April,	389,772	98.63	1.37	390,746	94.08	5.92
May,	389,552	98.57	1.43	396,022	95.35	4.65
June,	382,342	96.75	3.25	391,740	94.32	5.68
July,	369,070	93.39	6.61	390,075	93.92	6.08
August,	374,251	94.70	5.30	395,540	95.24	4.76
September,	380,663	96.32	3.68	403,728	97.21	2.79
October,	386,760	97.87	2.13	410,996	98.96	1.04
November,	388,792	98.38	1.62	415,322	100.00	–
December,	390,970	98.93	1.07	412,875	99.41	0.59

WAGES AND EARNINGS: BY INDUSTRIES.

1900, 1901.

[In this presentation, the figures given under "Total Amount Paid in Wages During the Year" represent the returns made by the same establishment in each industry for the years 1900 and 1901. The average yearly earnings have been obtained by dividing the total amount paid in wages by the number representing the average number of persons employed during the same year (pages 79 and 80). It should be borne in mind that these sums were paid to wage earners only, and do not include the amounts paid to officers, clerks, or other salaried persons.]

Industries.	Total Amount Paid in Wages During the Year		Average Yearly Earnings	
	1900	1901	1900	1901
Agricultural implements,	$320,964	$325,219	$480.49	$489.79
Arms and ammunition,	1,040,185	1,335,076	508.40	503.61
Artisans' tools,	1,352,961	1,415,871	551.55	540.82
Awnings, sails, tents, etc.,	139,325	154,295	529.75	555.02
Bicycles, tricycles, etc.,	406,426	361,260	532.67	538.39
Boots and shoes,	26,502,961	30,096,415	465.44	482.86
Boots and shoes (factory product),	24,362,479	27,793,529	476.56	493.51
Soles, heels, and cut stock,	1,663,627	1,787,096	367.08	383.58
Boot and shoe findings,	287,360	328,042	381.62	385.03
Stitching, heeling, etc.,	189,495	187,748	354.20	375.50
Boxes, barrels, kegs, etc.,	1,312,935	1,505,927	409.01	443.96
Boxes (paper),	849,964	918,030	351.52	360.01
Brick, tiles, and sewer pipe,	585,320	602,826	424.45	422.44
Brooms, brushes, and mops,	346,239	329,936	354.39	327.97
Building materials,	695,982	715,069	594.86	589.02
Burial cases, caskets, coffins, etc.,	100,285	107,467	576.35	587.25
Buttons and dress trimmings,	362,050	318,061	360.61	373.75
Carpetings,	1,681,974	1,802,452	388.45	394.15
Carriages and wagons,	1,195,232	1,201,353	603.96	603.39
Cement, kaolin, lime, and plaster,	57,913	81,070	448.94	509.87
Chemical preparations (compounded),	309,353	315,463	600.69	580.96
Clocks and watches,	1,650,520	1,839,468	555.36	556.40
Clothing,	4,072,847	4,028,851	383.36	371.97
Cooking, lighting, and heating apparatus,	1,097,099	1,139,761	605.13	619.10
Cordage and twine,	834,458	864,563	335.80	333.04
Cotton goods,	32,997,457	32,617,806	362.59	363.76
Cotton goods (woven),	28,966,059	28,930,201	364.79	368.81
Cotton yarn and thread,	3,873,709	3,522,735	345.96	325.82
Cotton waste,	157,689	164,870	390.32	398.24
Crayons, pencils, crucibles, etc.,	38,739	35,950	425.70	395.05
Drugs and medicines,	350,053	349,962	400.52	424.71
Dyestuffs,	59,046	60,091	487.98	522.53
Earthen, plaster, and stone ware,	93,958	105,888	474.54	481.31
Electrical apparatus and appliances,	2,836,784	3,238,561	515.40	531.78
Electroplating,	62,053	61,240	488.61	501.97
Emery and sand paper and cloth, etc.,	182,148	212,778	617.45	599.37
Fancy articles, etc.,	160,312	195,741	406.88	438.88
Fertilizers,	118,996	127,952	524.21	592.37
Fine arts and taxidermy,	12,598	12,299	547.74	512.46
Fireworks and matches,	35,711	40,378	420.13	395.86
Flax, hemp, and jute goods,	953,724	1,039,853	323.63	320.45

WAGES AND EARNINGS: BY INDUSTRIES — 1900, 1901 — Concluded.

Industries.	Total Amount Paid in Wages During the Year		Average Yearly Earnings	
	1900	1901	1900	1901
Food preparations,	$4,177,354	$4,221,698	$426.61	$425.40
Furniture,	2,863,691	2,970,803	495.19	499.38
Glass,	158,007	156,962	554.41	548.82
Glue, isinglass, and starch,	180,190	187,900	449.35	453.86
Hair work (animal and human),	52,374	52,899	374.10	372.53
Hose and belting: rubber, linen, etc.,	41,341	45,223	590.59	551.50
Hosiery and knit goods,	2,291,248	2,260,680	334.68	322.59
Ink, mucilage, and paste,	36,289	49,308	442.55	513.63
Ivory, bone, shell, and horn goods, etc.,	571,792	573,627	400.70	415.07
Jewelry,	2,680,441	2,782,592	492.64	495.56
Leather,	2,857,736	3,163,880	485.76	479.30
Leather goods,	576,794	581,689	473.56	460.56
Liquors (bottled) and carbonated beverages,	110,589	119,501	542.10	566.36
Liquors (malt),	1,258,108	1,260,404	812.73	816.32
Liquors (distilled),	29,324	25,415	733.10	726.14
Lumber,	273,715	302,152	511.62	550.37
Machines and machinery,	15,559,916	15,171,118	549.20	551.52
Metals and metallic goods,	11,099,780	12,451,457	537.26	558.49
Models, lasts, and patterns,	417,575	456,000	685.67	716.98
Musical instruments and materials,	1,842,338	1,967,116	587.48	586.67
Oils and illuminating fluids,	67,239	71,518	555.69	522.03
Paints, colors, and crude chemicals,	139,302	145,563	542.03	549.29
Paper,	3,792,941	4,157,628	422.71	443.10
Paper goods,	1,399,082	1,513,715	379.67	390.84
Perfumes, toilet articles, etc.,	14,016	13,225	412.24	426.61
Photographs and photographic materials,	123,842	122,000	595.39	564.81
Polishes and dressing,	142,173	154,064	405.05	417.52
Printing, publishing, and bookbinding,	2,339,255	2,476,314	514.80	543.41
Print works, dye works, and bleacheries,	2,816,815	2,808,554	436.31	425.35
Railroad construction and equipment,	1,641,963	1,648,670	593.84	584.22
Rubber and elastic goods,	4,485,961	4,910,405	419.84	444.62
Saddlery and harness,	249,100	199,461	484.63	515.40
Scientific instruments and appliances,	732,387	794,508	437.25	465.44
Shipbuilding,	950,655	1,161,316	660.64	652.42
Silk and silk goods,	936,733	944,325	367.20	375.63
Sporting and athletic goods,	166,033	205,759	439.24	428.66
Stone,	2,192,388	2,467,658	518.17	532.51
Quarried,	970,192	1,167,219	436.24	471.60
Cut and monumental,	1,222,196	1,300,439	608.97	602.33
Straw and palm leaf goods,	1,314,639	1,281,044	459.66	449.33
Tallow, candles, soap, and grease,	444,487	462,871	502.81	505.32
Tobacco, snuff, and cigars,	1,488,729	1,544,786	631.08	640.19
Toys and games (children's),	219,548	234,803	411.14	438.88
Trunks and valises,	43,244	48,511	470.04	470.98
Whips, lashes, and stocks,	217,123	220,685	412.78	417.96
Wooden goods,	702,272	697,927	464.47	468.09
Woollen goods,	8,563,043	8,894,618	397.58	402.91
Woven goods and yarn,	8,244,257	8,557,755	395.35	400.96
Shoddy, waste, etc.,	318,786	336,863	465.38	459.57
Worsted goods,	5,427,372	6,314,431	379.70	389.88
All Industries,	$170,505,516	$179,851,715	$441.61	$449.63

CLASSIFIED WEEKLY WAGES: BY SELECTED INDUSTRIES.

1900, 1901.

[In this presentation is shown for the nine leading industries and for All Industries for 1900 and 1901, a classification by sex of the weekly wages, ranging from under $5 per week to $20 and over. The returns were made by manufacturers to cover the week during which the largest number of persons was employed. It should be borne in mind that these figures represent wage earners only; officers, clerks, or other salaried persons are not included. Considerations of space have led to the curtailment of this presentation to the nine leading industries, but the figures in detail for 1900 and 1901 for any industry desired may be obtained upon application to this Department.]

Industries and Classification of Weekly Wages.	1900				1901			
	Adults (21 Years of Age and over)		Young Persons (under 21 Years of Age)	Both Sexes	Adults (21 Years of Age and over)		Young Persons (under 21 Years of Age)	Both Sexes
	Males	Females			Males	Females		
Boots and Shoes.	41,370	18,662	7,256	67,288	45,475	20,288	7,511	73,274
Under $5,	1,607	2,684	3,253	7,544	1,498	2,641	3,182	7,321
$5 but under $6,	1,423	2,065	1,394	4,882	1,411	1,997	1,488	4,896
$6 but under $7,	2,048	2,325	1,180	5,553	2,123	2,572	1,226	5,921
$7 but under $8,	2,419	2,379	744	5,542	2,728	2,501	731	5,960
$8 but under $9,	2,918	2,163	328	5,409	3,076	2,493	383	5,952
$9 but under $10,	4,749	2,179	208	7,136	5,030	2,644	298	7,972
$10 but under $12,	7,046	2,556	97	9,699	7,462	2,629	145	10,236
$12 but under $15,	9,119	1,669	38	10,826	10,143	2,022	49	12,214
$15 but under $20,	7,481	577	13	8,071	8,869	749	7	9,625
$20 and over,	2,560	65	1	2,626	3,135	40	2	3,177
Carpetings.	1,874	1,834	884	4,592	1,992	1,986	866	4,844
Under $5,	79	309	528	916	80	262	426	768
$5 but under $6,	88	280	222	590	47	337	216	600
$6 but under $7,	199	212	53	464	223	294	87	604
$7 but under $8,	194	185	33	412	204	235	62	501
$8 but under $9,	297	313	28	638	318	310	46	674
$9 but under $10,	203	247	14	464	251	232	19	502
$10 but under $12,	276	225	6	507	299	276	7	582
$12 but under $15,	291	63	–	354	301	40	3	344
$15 but under $20,	205	–	–	205	221	–	–	221
$20 and over,	42	–	–	42	48	–	–	48
Cotton Goods.	41,660	35,019	18,142	94,821	41,132	34,729	19,035	94,896
Under $5,	3,185	5,379	8,958	17,522	2,657	4,998	9,216	16,871
$5 but under $6,	3,232	5,503	4,619	13,354	3,184	5,106	4,942	13,232
$6 but under $7,	6,604	7,657	2,800	17,061	6,375	7,962	2,908	17,245
$7 but under $8,	6,099	6,232	1,154	13,485	6,349	6,415	1,138	13,902
$8 but under $9,	5,001	5,197	352	10,550	5,200	5,303	460	10,963
$9 but under $10,	5,645	3,662	212	9,519	5,484	3,371	308	9,163
$10 but under $12,	5,511	1,268	42	6,821	5,514	1,415	51	6,980
$12 but under $15,	4,019	104	5	4,128	4,073	156	5	4,234
$15 but under $20,	1,606	17	–	1,623	1,512	3	6	1,521
$20 and over,	758	–	–	758	784	–	1	785

CLASSIFIED WEEKLY WAGES: BY SELECTED INDUSTRIES —1900, 1901 — Continued.

Industries and Classification of Weekly Wages.	1900				1901			
	Adults (21 Years of Age and over)		Young Persons (under 21 Years of Age)	Both Sexes	Adults (21 Years of Age and over)		Young Persons (under 21 Years of Age)	Both Sexes
	Males	Females			Males	Females		
Leather.	6,715	55	327	7,097	7,060	103	349	7,512
Under $5,	116	–	78	194	127	5	78	210
$5 but under $6,	135	9	84	228	121	19	56	196
$6 but under $7,	345	36	80	461	300	65	125	490
$7 but under $8,	704	4	43	751	702	5	47	754
$8 but under $9,	830	1	15	846	870	2	29	901
$9 but under $10,	1,557	1	24	1,582	1,680	3	12	1,695
$10 but under $12,	1,699	2	2	1,703	1,729	2	1	1,732
$12 but under $15,	875	2	1	878	951	2	–	953
$15 but under $20,	349	–	–	349	478	–	1	479
$20 and over,	105	–	–	105	102	–	–	102
Machines and Machinery.	30,204	305	1,587	32,096	29,737	380	1,636	31,753
Under $5,	1,195	38	613	1,846	892	67	590	1,549
$5 but under $6,	1,002	57	329	1,388	823	67	291	1,181
$6 but under $7,	1,374	68	340	1,782	1,385	107	331	1,823
$7 but under $8,	2,578	73	212	2,863	2,294	78	237	2,609
$8 but under $9,	3,517	44	37	3,598	2,897	31	96	3,024
$9 but under $10,	3,944	11	19	3,974	4,389	12	50	4,451
$10 but under $12,	4,571	13	30	4,614	4,810	10	22	4,842
$12 but under $15,	5,830	–	7	5,837	5,985	7	13	6,005
$15 but under $20,	5,055	1	–	5,056	5,153	1	6	5,160
$20 and over,	1,138	–	–	1,138	1,109	–	–	1,109
Metals and Metallic Goods.	19,935	1,486	2,090	23,511	21,072	1,550	2,240	24,862
Under $5,	454	283	921	1,658	494	317	1,012	1,823
$5 but under $6,	481	291	539	1,311	399	333	454	1,186
$6 but under $7,	900	478	296	1,674	840	430	426	1,696
$7 but under $8,	1,435	175	179	1,789	1,381	194	189	1,764
$8 but under $9,	1,535	124	105	1,764	1,472	90	70	1,632
$9 but under $10,	2,928	81	28	3,037	3,389	89	61	3,539
$10 but under $12,	3,451	38	14	3,503	3,769	61	25	3,855
$12 but under $15,	3,965	8	7	3,980	3,963	26	2	3,991
$15 but under $20,	3,767	8	1	3,776	4,190	10	1	4,201
$20 and over,	1,019	–	–	1,019	1,175	–	–	1,175
Paper.	5,661	3,513	587	9,761	5,939	3,378	847	10,164
Under $5,	69	751	192	1,012	66	649	261	976
$5 but under $6,	90	911	145	1,146	62	767	182	1,011
$6 but under $7,	231	1,148	164	1,543	152	1,214	241	1,607
$7 but under $8,	638	408	53	1,099	550	440	70	1,060
$8 but under $9,	553	183	10	746	504	190	36	730
$9 but under $10,	1,633	64	19	1,716	1,811	48	46	1,905
$10 but under $12,	747	24	4	775	903	34	9	946
$12 but under $15,	854	20	–	874	974	28	2	1,004
$15 but under $20,	669	4	–	673	708	8	–	716
$20 and over,	177	–	–	177	209	–	–	209
Woollen Goods.	13,955	7,253	2,943	24,151	14,364	7,001	3,260	24,625
Under $5,	523	1,009	1,356	2,888	493	986	1,406	2,885
$5 but under $6,	615	907	814	2,336	530	821	979	2,330
$6 but under $7,	1,625	1,586	444	3,655	1,619	1,454	475	3,548
$7 but under $8,	2,830	1,284	177	4,291	3,038	1,259	261	4,558
$8 but under $9,	1,939	1,123	96	3,158	1,892	1,060	94	3,046
$9 but under $10,	2,190	674	31	2,895	2,138	591	29	2,758
$10 but under $12,	1,904	489	17	2,410	1,995	637	9	2,641
$12 but under $15,	1,434	151	8	1,593	1,745	183	7	1,935
$15 but under $20,	606	21	–	627	621	10	–	631
$20 and over,	289	9	–	298	293	–	–	293

CLASSIFIED WEEKLY WAGES: BY SELECTED INDUSTRIES —1900, 1901— Concluded.

Industries and Classification of Weekly Wages.	1900				1901			
	Adults (21 Years of Age and over)		Young Persons (under 21 Years of Age)	Both Sexes	Adults (21 Years of Age and over)		Young Persons (under 21 Years of Age)	Both Sexes
	Males	Females			Males	Females		
Worsted Goods.	7,612	5,253	4,105	16,970	8,434	5,586	4,388	18,408
Under $5,	211	380	1,493	2,084	266	447	1,514	2,227
$5 but under $6,	433	1,202	1,329	2,964	743	1,009	1,454	3,206
$6 but under $7,	638	1,531	971	3,140	794	1,575	1,033	3,402
$7 but under $8,	1,058	636	195	1,889	1,083	982	211	2,276
$8 but under $9,	1,403	505	92	2,000	1,266	587	122	1,975
$9 but under $10,	752	510	16	1,278	806	431	38	1,275
$10 but under $12,	1,200	342	8	1,550	1,255	387	13	1,655
$12 but under $15,	1,410	118	1	1,529	1,620	132	2	1,754
$15 but under $20,	367	26	–	393	433	33	1	467
$20 and over,	140	3	–	143	168	3	–	171
All Industries.	266,565	114,241	57,422	438,228	277,555	116,218	60,929	454,702
Under $5,	9,674	18,228	27,739	55,641	8,908	17,599	28,846	55,353
$5 but under $6,	9,988	17,940	13,470	41,398	9,720	17,606	14,296	41,622
$6 but under $7,	18,788	23,105	8,829	50,722	18,337	23,390	9,609	51,336
$7 but under $8,	25,805	17,526	4,108	47,439	26,320	18,371	4,269	48,960
$8 but under $9,	26,542	14,230	1,673	42,445	26,099	14,748	1,954	42,801
$9 but under $10,	38,026	11,110	911	50,047	39,835	11,150	1,230	52,215
$10 but under $12,	42,209	7,563	500	50,272	44,399	8,052	485	52,936
$12 but under $15,	47,216	3,354	159	50,729	51,269	3,876	192	55,337
$15 but under $20,	36,831	1,027	29	37,887	39,933	1,274	42	41,249
$20 and over,	11,486	158	4	11,648	12,735	152	6	12,893

Analysis.

The final line of the presentation on page 78 shows that in the 4,696 establishments making return in All Industries, an average number of 386,103 persons was employed during the year 1900, and 399,997 persons in 1901, an increase of 13,894 persons, or 3.60 per cent. The average number of males employed in 1900 was 258,682, and in 1901, 269,324, an increase of 10,642 persons, or 4.11 per cent. The average number of females employed in 1900 was 127,421 and in 1901, 130,673, an increase of 3,252 persons, or 2.55 per cent. With the exception of Cotton Goods and Machines and Machinery each of the nine leading industries exhibits an increase in the average number of persons employed in 1901 as against 1900.

From the presentation on pages 79 and 80 we find that the smallest number of persons employed, at periods of employment of the smallest number, for All Industries, was 322,200 in 1900, and 339,405 for the corresponding periods in 1901, an increase of 17,205 persons, or 5.34 per cent. With the exception of Cotton Goods and Machines and Machinery each

of the nine leading industries shows an increase in the smallest number of persons employed in 1901 as compared with 1900.

From the same presentation it also appears that 440,363 persons were employed in 1900 at the periods of employment of the greatest number, and at the corresponding periods in 1901, 456,137 persons were employed, an increase of 15,774 persons, or 3.58 per cent. But one of the nine leading industries, Machines and Machinery, exhibits a decrease in the greatest number of persons employed.

The presentation on pages 81 and 82 exhibits the excess of greatest number over smallest number of persons employed in 1900 and 1901. We reproduce the figures for the nine leading industries.

Industries.	Excess of Greatest Over Smallest Number of Persons Employed		Increase (+) or Decrease (−) in 1901	
	1900	1901	Number	Percentages
Boots and shoes (aggregate),	23,148	22,564	−584	−2.52
Factory product,	20,609	20,402	−207	−1.00
Soles, heels, and cut stock,	1,839	1,606	−233	−12.67
Findings,	343	340	−3	−0.88
Stitching, heeling, etc.,	357	216	−141	−39.50
Carpetings,	984	527	−457	−46.44
Cotton goods (aggregate),	10,888	15,339	+4,451	+40.88
Woven,	9,158	12,480	+3,322	+36.27
Yarn and thread,	1,665	2,819	+1,154	+69.31
Waste,	65	40	−25	−38.46
Leather,	2,522	2,031	−491	−19.47
Machines and machinery,	7,752	8,416	+664	+8.57
Metals and metallic goods,	6,387	5,650	−737	−11.54
Paper,	2,304	2,166	−138	−5.99
Woollen goods (aggregate),	6,277	6,127	−150	−2.39
Woven goods and yarn,	5,835	5,737	−98	−1.68
Shoddy, waste, etc.,	442	390	−52	−11.76
Worsted goods,	8,460	4,868	−3,592	−42.46
Nine industries,	68,722	67,688	−1,034	−1.50
Other industries,	49,441	49,044	−397	−0.80
All industries,	118,163	116,732	−1,431	−1.21

Seven of the nine leading industries show more continuous employment in 1901 than in 1900. The other two industries, namely, Cotton Goods and Machines and Machinery, show percentages which indicate a larger degree of unemployment. In Cotton Goods, there were 4,451 more persons who, for a

longer or shorter period, were out of employment in 1901 than in 1900, and in Machines and Machinery, 664 more persons were affected by business depressions which prevented their having as steady employment in 1901 as in 1900. In All Industries, the excess of greatest over smallest number was 118,163 in 1900, and 116,732 in 1901; that is to say, 1,431 less persons were unemployed in the latter than in the former year. The duration of this period of unemployment in either year, it is, of course, impossible to ascertain.

For the purpose of exhibiting this range of employment and unemployment year by year since 1895, as shown by these annual reports, the following table of percentages is given:

Comparative Years.	Number of Establishments Considered	Percentages		
		Persons Employed at Periods of Employment of Smallest Number of Persons Employed at Periods of Employment of Greatest Number	Range (Unemployed at some time During the Year)	Persons Employed at Periods of Employment of Greatest Number
1895,	4,609	73.53	26.47	100.00
1896,	4,609	66.52	33.48	100.00
1896,	4,695	67.32	32.68	100.00
1897,	4,695	71.74	28.26	100.00
1897,	4,701	72.13	27.87	100.00
1898,	4,701	70.36	29.64	100.00
1898,	4,740	70.21	29.79	100.00
1899,	4,740	74.19	25.81	100.00
1899,	4,645	74.17	25.83	100.00
1900,	4,645	73.08	26.92	100.00
1900,	4,696	73.17	26.83	100.00
1901,	4,696	74.41	25.59	100.00

In order that the full effect of these percentages may be appreciated, it should be remembered that if no persons were out of employment at any time during the year in the establishments making return in the different industries, the percentage of persons employed throughout the year would stand at 100; but, inasmuch as at the periods of employment of the smallest number, less persons are employed than at the periods of employment of the greatest number, the difference between the number of persons employed at these two periods may be rep-

resented by a percentage which indicates the number of persons unemployed at some time during the year, the duration of unemployment, of course, not being determined. This percentage is shown in the table in the third column of figures.

It will be noted that in every year more than one-fourth of the greatest number of persons employed were unemployed at some time during the year, and in one instance the percentage exceeded one-third. In 1900, 4,696 establishments being compared, nearly 27 out of every 100 persons (26.83 per cent) were out of employment at some time during the year, as against 26 persons out of every 100 (25.59 per cent) in 1901.

It does not, of course, follow that these persons were actually unemployed, for it is quite probable that a person out of employment in one establishment or industry may have obtained employment in some other establishment or other line of work or at a trade.

The figures just considered are based upon the returns made by each establishment. Upon pages 83 to 85, figures on the basis of industries are shown. From this presentation we reproduce the section devoted to All Industries.

Months.	Number of Persons Employed		Percentages of Employment		Percentages of Unemployment	
	1900	1901	1900	1901	1900	1901
January,	389,107	393,625	98.46	94.78	1.54	5.22
February,	393,275	395,334	99.52	95.19	0.48	4.81
March,	395,188	400,078	100.00	96.33	–	3.67
April,	389,772	390,746	98.63	94.08	1.37	5.92
May,	389,552	396,022	98.57	95.35	1.43	4.65
June,	382,342	391,740	96.75	94.32	3.25	5.68
July,	369,070	390,075	93.39	93.92	6.61	6.08
August,	374,251	395,540	94.70	95.24	5.30	4.76
September,	380,663	403,728	96.32	97.21	3.68	2.79
October,	386,760	410,996	97.87	98.96	2.13	1.04
November,	388,792	415,322	98.38	100.00	1.62	–
December,	390,970	412,875	98.93	99.41	1.07	0.59

The number of persons employed in March, 1900 (this being the month of employment of the greatest number in that year), is considered 100 per cent; and the number of persons employed in November, 1901 (this being the month of employ-

ment of the greatest number in that year), is also considered 100 per cent. The percentages of unemployment during the other months are obtained by finding the difference between the percentages of employment appearing each month and 100 per cent. For example, the smallest number of persons employed in 1900 is found in the month of July; the number employed in the month of March, as has been explained, constituted 100 per cent; the number employed in the month of July is represented by 93.39 per cent, the percentage of unemployment being the difference between 93.39 and 100 per cent, or 6.61 per cent. Again, the smallest number of persons employed in any one month in 1901 is found, also, in the month of July, the percentage indicating the smallest number employed being 93.92; the difference between this and 100, namely, 6.08, indicates the percentage of unemployment in that month. It will be noted that the percentages of unemployment are generally higher in 1901 than in 1900.

On pages 86 and 87 is given the total amount paid in wages during the years 1900 and 1901 by the 4,696 establishments. The amount paid in 1900 was $170,505,516, and in 1901, $179,851,715, an increase in the aggregate of $9,346,199, or 5.48 per cent. All of the nine leading industries, except Cotton Goods and Machines and Machinery, exhibit increases in the aggregate amount of wages paid in 1901 as compared with 1900.

On pages 86 and 87 are presented the average yearly earnings in each of the industries and for All Industries. These averages are obtained by dividing the total amount paid in wages in each industry, as presented in this table, by the aggregate average number of persons employed, without discrimination as to sex or age, as given in the table on pages 77 and 78. Such an average is, of course, only useful in comparison with averages similarly obtained.

The following table shows the average yearly earnings for each of the nine leading industries, for All Industries, and for the other industries in the aggregate, together with the increases or decreases expressed in amounts and percentages.

Industries.	Average Yearly Earnings		Increase (+) or Decrease (−) in 1901	
	1900	1901	Amounts	Percentages
Boots and shoes (aggregate),	$465.44	$482.86	+$17.42	+3.74
Factory product,	476.56	493.51	+16.95	+3.56
Soles, heels, and cut stock,	367.08	383.58	+16.50	+4.49
Findings,	381.62	385.03	+3.41	+0.89
Stitching, heeling, etc.,	354.20	375.50	+21.30	+6.01
Carpetings,	388.45	394.15	+5.70	+1.47
Cotton goods (aggregate),	362.59	363.76	+1.17	+0.32
Woven goods,	364.79	368.81	+4.02	+1.10
Yarn and thread,	345.96	325.82	−20.14	−5.82
Waste,	390.32	398.24	+7.92	+2.03
Leather,	485.76	479.30	−6.46	−1.33
Machines and machinery,	549.20	551.52	+2.32	+0.42
Metals and metallic goods,	537.26	558.49	+21.23	+3.95
Paper,	422.71	443.10	+20.39	+4.82
Woollen goods (aggregate),	397.58	402.91	+5.33	+1.34
Woven goods and yarn,	395.35	400.96	+5.61	+1.42
Shoddy, waste, etc.,	465.38	459.57	−5.81	−1.25
Worsted goods,	379.70	389.88	+10.18	+2.68
Nine industries,	430.56	439.97	+9.41	+2.19
Other industries,	462.35	467.70	+5.35	+1.16
All industries,	441.61	449.63	+8.02	+1.82

The increase in the average yearly earnings in 1901 as against 1900 for All Industries was $8.02 per person, or 1.82 per cent. For the nine industries in the aggregate, the increase was $9.41, or 2.19 per cent, and for the other industries $5.35, or 1.16 per cent. With the exception of Leather, all of the nine leading industries show increases in the average amount earned annually, although under the detail of Cotton Goods the line yarn and thread shows a falling off of nearly six per cent, and under Woollen Goods, the line shoddy, waste, etc. exhibits a decrease of 1.25 per cent.

Actual wage conditions may, perhaps, be more accurately seen from the presentation of classified weekly wages, pages 88 to 90, than from aggregate or average tables of wages. The following table shows the percentages of adult males and females and of young persons in each wage class for All Industries:

Classification of Weekly Wages.	Percentages					
	1900			1901		
	Males	Females	Young Persons	Males	Females	Young Persons
Under $5,	17.39	32.76	49.85	16.09	31.80	52.11
$5 but under $6,	24.13	43.33	32.54	23.35	42.30	34.35
$6 but under $7,	37.04	45.55	17.41	35.72	45.56	18.72
$7 but under $8,	54.40	36.94	8.66	53.76	37.52	8.72
$8 but under $9,	62.53	33.53	3.94	60.98	34.46	4.56
$9 but under $10,	75.98	22.20	1.82	76.29	21.35	2.36
$10 but under $12,	83.96	15.04	1.00	83.87	15.21	0.92
$12 but under $15,	93.08	6.61	0.31	92.65	7.00	0.35
$15 but under $20,	97.21	2.71	0.08	96.81	3.09	0.10
$20 and over,	98.61	1.36	0.03	98.77	1.18	0.05
Totals,	60.83	26.07	13.10	61.04	25.56	13.40

This table indicates that of every 100 employés returned in All Industries as receiving less than $5 per week, about 17 were males, 33 were females, and 50 were young persons in 1900, and about 16 were males, 32 were females, and 52 were young persons in 1901. The proportion of males in each class increases from the first to the last class in both years, while the proportion of females decreases after the class $6 but under $7.

The fluctuations in the different wage classes are shown for All Industries in the following table:

Classification of Weekly Wages.	Percentages							
	1900				1901			
	Males	Females	Young Persons	Totals	Males	Females	Young Persons	Totals
Under $5,	3.63	15.96	48.31	12.70	3.21	15.14	47.34	12.17
$5 but under $6,	3.75	15.70	23.46	9.45	3.50	15.15	23.46	9.16
$6 but under $7,	7.05	20.22	15.37	11.57	6.61	20.13	15.77	11.29
$7 but under $8,	9.68	15.34	7.15	10.82	9.48	15.81	7.01	10.77
$8 but under $9,	9.96	12.46	2.91	9.69	9.40	12.69	3.21	9.41
$9 but under $10,	14.26	9.72	1.59	11.42	14.35	9.59	2.02	11.48
$10 but under $12,	15.83	6.62	0.87	11.47	16.00	6.93	0.80	11.64
$12 but under $15,	17.71	2.94	0.28	11.58	18.47	3.33	0.31	12.17
$15 but under $20,	13.82	0.90	0.05	8.64	14.39	1.10	0.07	9.07
$20 and over,	4.31	0.14	0.01	2.66	4.59	0.13	0.01	2.84
Totals,	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

In this table, the number of males, females, young persons, and totals for both sexes and all ages are each considered as

representing 100 per cent, and the number of employés in each class constitutes parts of this aggregate, which parts are represented by percentages totalizing to 100. The percentages as shown in the table do not vary materially in either year.

Applying the percentages found in the preceding analysis tables to the average number of persons employed in 1901 (399,997) and distributing this average number into the several classes of weekly wages, we secure an estimated amount paid during one week of the year to the average number of males, females, and young persons employed. The figures appear as follows:

Classification of Weekly Wages.	Number of—			Estimated Weekly Wages of—		
	Males	Females	Young Persons	Males	Females	Young Persons
Under $5,	7,832	15,480	25,367	23,496	46,440	76,101
$5 but under $6,	8,555	15,499	12,586	47,053	85,245	69,223
$6 but under $7,	16,131	20,575	8,454	104,852	133,738	54,951
$7 but under $8,	23,160	16,164	3,756	173,700	121,230	28,170
$8 but under $9,	22,953	12,971	1,716	195,101	110,254	14,586
$9 but under $10,	35,032	9,804	1,084	332,804	93,138	10,298
$10 but under $12,	39,049	7,082	428	429,539	77,902	4,708
$12 but under $15,	45,101	3,408	170	608,864	46,008	2,295
$15 but under $20,	35,123	1,121	36	614,653	19,618	630
$20 and over,	11,220	134	6	252,450	3,015	135
Totals,	244,156	102,238	53,603	2,782,512	736,588	261,097

As before stated, these figures are estimates based upon actual percentages and show that, during one week, the amount of $3,780,197 was paid in wages to an average of 399,997 persons. Of this amount, $2,782,512, or 73.61 per cent, was paid to adult males; $736,588, or 19.48 per cent, to adult females; and $261,097, or 6.91 per cent, to young persons of both sexes. These figures, while estimates, are approximately correct, for we find that of actual amounts paid to men, women, and children as reported by the United States Census for 1900, 78.93 per cent of the total wages was paid to men 16 years of age and over, and 19.99 per cent to women 16 years of age and over. The variation in these Census percentages and those of the Annual Statistics arises from the fact that in these Annual Reports the age separation is at 21 instead of 16 years, and

many of those classified by the United States as men and women would, under the Massachusetts classification, be enumerated under "Young Persons." However, the figures are sufficiently close to show that the averages and percentages in this Report are indicative of the actual conditions.

Taking the total amount of wages paid in 1901, as shown on page 87, and distributing it in the same proportion among the males, females, and young persons and dividing the amounts thus obtained by the figure representing the average number of persons employed, we secure an average yearly earnings for males, females, and young persons for certain industries as follows:

Estimated Average Yearly Earnings.

Industries.	Males	Females	Young Persons
Boots and shoes (factory product),	$574.17	$394.88	$243.50
Carpetings,	502.65	356.07	232.09
Cotton goods (woven),	447.17	343.71	235.68
Cotton yarn and thread,	433.42	305.45	214.84
Leather,	491.59	309.58	281.12
Machines and machinery,	570.01	311.67	271.07
Metals and metallic goods,	609.33	314.87	248.53
Paper,	552.58	293.22	273.46
Woollen goods (woven goods and yarn),	463.93	354.14	238.53
Woollen goods (shoddy, waste, etc.),	480.66	291.44	233.00
Worsted goods,	483.77	356.13	252.45
All Industries,	$542.23	$342.68	$231.85

Comparing these averages with those shown in the table on pages 86 and 87, we find marked variations. The average yearly earnings for all persons of both sexes and all ages was $449.63 in All Industries in 1901, and here we find when distributed in accordance with age and sex that the males of 21 years of age and over earn, on an average, $542.23 annually, the females 21 years of age and over, $342.68, and the young persons under 21 years of age of either sex, an average of $231.85. Considering the industry Boots and Shoes (Factory Product), we find that the average as shown on page 86 was $493.51. Distributing the persons employed into their respective classes, by sex and age, we find that 73.28 per cent of all the employés are males, 22.06 per cent are females, and 4.66 per cent are

young persons of both sexes. Distributing the total wages paid into these three classes in accordance with the proportions shown above and dividing by the estimated number of adult males, adult females, and young persons, we secure average yearly earnings as follows: Males, $574.17; females, $394.88; and young persons, $243.50. These averages are more nearly correct than those shown on page 86 which, as has been stated, are averages obtained for all persons indiscriminately.

Considering All Industries and comparing the figures with those obtained under the same method in 1899 and 1900, taken from the report of last year (page 127), we secure the following comparison:

	1899.	1900.	1901.
Males,	$523.34	$530.82	$542.23
Females,	324.72	334.70	342.68
Young persons,	219.34	228.33	231.85

Working Time and Proportion of Business Done.

Under this head are shown the average number of days in operation, average proportion of business done, and the actual number of days each of the 4,696 establishments was in operation during the years 1900 and 1901.

The average number of days in operation is based upon the average number of persons employed, the number of days reported by each establishment being multiplied by the figures representing the average number of persons employed therein, and the sum of these multiplications for all the establishments divided by the aggregate average number of persons, an average for each industry and for All Industries being thus obtained. The actual number of working days exclusive of Sundays and holidays was 306 in 1900 and also in 1901.

The proportion of business done is based upon the greatest amount of goods which can be turned out in an establishment, presupposing a sufficient demand for goods, without increasing its present facilities. This greatest amount is considered as 100 per cent. If an establishment produced goods equivalent to three-quarters of its greatest capacity, the proportion of business done would be 75 per cent, while if only one-half of a possible output was reached it would be considered as 50 per cent. For example, in All Industries the average proportion of business done for the year 1901 is represented by 68.09 per cent; that is to say, it slightly exceeded two-thirds of what could have been done, had business conditions warranted, without enlarging the capacity of the manufacturing plants.

The several proportions returned by the establishments in each industry have been aggregated and the sum divided by the full number of establishments to obtain the average for each industry and for All Industries.

DAYS IN OPERATION AND PROPORTION OF BUSINESS DONE: BY INDUSTRIES.

1900, 1901.

[The figures given in the first two columns of this presentation represent the Average Number of Days in Operation, while in the last two columns the Average Proportion of Business Done is shown. The average number of days in operation is based upon the average number of persons employed, the number of days per establishment being multiplied by the figures representing the average number of persons, and the sum divided by the aggregate average number of persons, an average for each industry and for All Industries being thus obtained. As regards Average Proportion of Business Done, greatest capacity, or maximum production, has been considered as 100 per cent, and the percentages given indicate the average proportion of business done during each year on the basis stated.]

Industries.	Average Number of Days in Operation		Average Proportion of Business Done	
	1900	1901	1900	1901
Agricultural implements,	292.66	292.73	57.89	57.00
Arms and ammunition,	289.32	289.57	69.75	76.33
Artisans' tools,	292.59	294.98	65.36	68.61
Awnings, sails, tents, etc.,	281.94	285.08	53.59	52.41
Bicycles, tricycles, etc.,	287.85	301.29	53.22	48.67
Boots and shoes,	284.99	290.49	64.76	65.98
Boots and shoes (factory product),	284.26	290.13	65.46	66.45
Soles, heels, and cut stock,	291.10	293.36	62.85	64.27
Boot and shoe findings,	294.96	297.70	74.03	78.17
Stitching, heeling, etc.,	288.51	292.11	56.95	56.86
Boxes, barrels, kegs, etc.,	288.57	289.74	70.52	75.56
Boxes (paper),	286.40	291.97	68.45	73.43
Brick, tiles, and sewer pipe,	223.97	209.78	63.08	63.55
Brooms, brushes, and mops,	297.41	295.95	65.74	66.39
Building materials,	297.85	294.58	61.39	65.35
Burial cases, caskets, coffins, etc.,	304.90	304.61	69.60	72.00
Buttons and dress trimmings,	289.07	287.09	61.88	61.13
Carpetings,	302.52	300.43	82.56	86.78
Carriages and wagons,	289.83	292.23	60.40	64.81
Cement, kaolin, lime, and plaster,	249.05	269.00	63.40	66.00
Chemical preparations (compounded),	299.32	299.71	60.38	62.54
Clocks and watches,	289.78	289.84	67.50	75.30
Clothing,	288.36	291.35	70.66	70.32
Cooking, lighting, and heating apparatus,	278.62	273.95	70.53	75.42
Cordage and twine,	297.67	300.08	73.71	75.79
Cotton goods,	299.13	296.18	91.69	88.53
Cotton goods (woven),	298.71	296.08	92.65	90.62
Cotton yarn and thread,	301.92	296.55	88.07	80.52
Cotton waste,	304.94	305.39	90.33	86.11
Crayons, pencils, crucibles, etc.,	266.70	303.86	85.00	78.75
Drugs and medicines,	298.77	296.31	59.44	62.64
Dyestuffs,	256.58	271.80	57.17	64.33
Earthen, plaster, and stone ware,	279.04	292.67	68.75	74.92
Electrical apparatus and appliances,	304.13	300.43	69.29	66.04
Electroplating,	275.13	283.51	66.11	68.67
Emery and sand paper and cloth, etc.,	296.68	302.70	76.57	80.29

DAYS IN OPERATION AND PROPORTION OF BUSINESS DONE: BY INDUSTRIES—1900, 1901—Concluded.

Industries.	Average Number of Days in Operation		Average Proportion of Business Done	
	1900	1901	1900	1901
Fancy articles, etc.,	296.91	298.14	71.00	74.85
Fertilizers,	289.31	306.00	66.00	63.86
Fine arts and taxidermy,	305.22	306.00	73.33	74.00
Fireworks and matches,	287.11	287.59	73.33	80.00
Flax, hemp, and jute goods,	293.29	301.17	77.18	84.27
Food preparations,	292.43	294.91	63.95	62.57
Furniture,	294.81	294.62	65.99	67.79
Glass,	259.45	274.46	58.57	63.43
Glue, isinglass, and starch,	244.15	243.89	67.95	71.59
Hair work (animal and human),	223.61	238.65	68.67	69.17
Hose and belting: rubber, linen, etc.,	297.21	293.44	68.00	68.00
Hosiery and knit goods,	302.84	299.24	71.03	72.37
Ink, mucilage, and paste,	296.18	292.77	55.14	54.43
Ivory, bone, shell, and horn goods, etc.,	286.48	289.17	69.78	72.09
Jewelry,	284.57	286.48	66.48	65.87
Leather,	297.18	301.07	65.22	68.07
Leather goods,	300.07	299.19	66.83	66.72
Liquors (bottled) and carbonated beverages,	288.42	294.22	57.28	59.28
Liquors (malt),	305.07	304.08	59.67	60.04
Liquors (distilled),	259.80	237.51	44.00	51.71
Lumber,	289.53	296.02	67.91	66.65
Machines and machinery,	291.94	297.53	69.79	68.54
Metals and metallic goods,	293.21	296.09	67.18	67.97
Models, lasts, and patterns,	285.59	294.28	56.23	60.13
Musical instruments and materials,	291.76	295.19	68.53	70.00
Oils and illuminating fluids,	303.97	304.73	62.67	67.44
Paints, colors, and crude chemicals,	279.72	291.48	60.30	63.74
Paper,	274.15	287.46	81.86	87.01
Paper goods,	299.39	300.64	74.66	79.49
Perfumes, toilet articles, etc.,	293.12	300.06	27.75	38.75
Photographs and photographic materials,	303.84	302.30	58.00	54.69
Polishes and dressing,	296.37	302.75	48.42	52.44
Printing, publishing, and bookbinding,	299.62	300.74	74.02	76.18
Print works, dye works, and bleacheries,	291.71	290.12	67.07	69.44
Railroad construction and equipment,	300.84	297.74	75.60	68.20
Rubber and elastic goods,	269.96	269.81	65.32	68.91
Saddlery and harness,	287.60	295.54	56.72	57.12
Scientific instruments and appliances,	292.58	300.62	74.22	68.33
Shipbuilding,	293.24	293.87	54.78	51.37
Silk and silk goods,	281.68	284.92	72.00	70.08
Sporting and athletic goods,	288.84	294.17	54.55	61.64
Stone,	280.68	283.71	55.73	56.90
Quarried,	277.75	281.31	50.47	52.51
Cut and monumental,	283.94	286.47	57.25	58.17
Straw and palm leaf goods,	255.76	257.40	69.75	69.40
Tallow, candles, soap, and grease,	300.35	301.58	65.02	63.40
Tobacco, snuff, and cigars,	290.49	292.08	62.23	61.04
Toys and games (children's),	281.74	288.08	72.78	68.56
Trunks and valises,	276.99	277.17	60.00	67.57
Whips, lashes, and stocks,	294.69	293.07	74.00	76.50
Wooden goods,	296.01	295.70	63.08	65.86
Woollen goods,	292.84	292.60	81.63	84.14
Woven goods and yarn,	293.38	292.76	84.82	86.28
Shoddy, waste, etc.,	276.53	288.04	68.04	75.07
Worsted goods,	275.33	290.83	75.63	82.68
All Industries,	290.88	292.78	66.96	68.09

NUMBER OF DAYS IN OPERATION. ALL INDUSTRIES.

1900, 1901.

[In this presentation, the number of establishments running a specified number of days is shown together with the aggregate average number of persons employed in such establishments during the years 1900 and 1901.]

Days in Operation.	1900		1901		Days in Operation.	1900		1901	
	Establishments	Persons Employed	Establishments	Persons Employed		Establishments	Persons Employed	Establishments	Persons Employed
24 days,	1	1	–	–	123 days,	1	15	–	–
25 days,	–	–	1	–	125 days,	7	86	11	65
32 days,	1	–	1	–	126 days,	1	1	–	–
33 days,	3	7	1	2	127 days,	–	–	2	20
39 days,	1	13	–	–	128 days,	2	9	5	65
40 days,	2	14	5	8	129 days,	3	30	6	34
42 days,	–	–	1	6	130 days,	5	40	5	73
48 days,	–	–	1	4	132 days,	1	4	–	–
50 days,	–	–	4	10	133 days,	4	57	4	32
52 days,	1	2	–	–	135 days,	3	13	–	–
53 days,	–	–	2	1	136 days,	3	23	1	9
60 days,	4	6	–	–	137 days,	2	6	1	2
63 days,	1	–	1	–	138 days,	–	–	2	4
65 days,	–	–	1	25	140 days,	1	1	4	31
66 days,	1	12	–	–	141 days,	3	97	–	–
67 days,	–	–	1	1	143 days,	1	–	2	4
68 days,	–	–	1	9	144 days,	2	13	2	–
69 days,	1	2	–	–	145 days,	1	33	2	20
70 days,	1	3	1	2	147 days,	–	–	1	4
73 days,	1	5	–	–	148 days,	–	–	2	44
75 days,	4	5	3	6	150 days,	17	271	7	25
76 days,	–	–	1	1	151 days,	–	–	1	9
77 days,	1	1	1	–	152 days,	3	9	–	–
78 days,	1	1	2	14	153 days,	22	194	30	272
83 days,	2	12	1	1	154 days,	–	–	2	9
84 days,	2	9	1	10	155 days,	1	–	3	3
85 days,	–	–	2	16	156 days,	4	17	4	25
86 days,	1	1	–	–	157 days,	3	10	1	4
87 days,	1	3	–	–	158 days,	–	–	2	21
88 days,	–	–	1	10	159 days,	1	25	1	7
90 days,	1	1	3	59	160 days,	1	14	2	6
91 days,	1	4	1	9	163 days,	2	5	1	5
92 days,	1	2	–	–	164 days,	2	16	2	109
95 days,	1	2	–	–	165 days,	5	94	3	37
96 days,	–	–	1	2	166 days,	3	69	4	34
97 days,	–	–	1	1	167 days,	2	50	–	–
98 days,	2	7	–	–	168 days,	3	43	–	–
100 days,	12	74	8	38	169 days,	2	13	–	–
101 days,	1	1	–	–	170 days,	1	13	2	59
102 days,	2	2	3	3	171 days,	2	30	2	158
103 days,	–	–	1	32	172 days,	2	86	1	5
104 days,	1	1	3	37	173 days,	5	130	5	194
105 days,	–	–	2	17	175 days,	8	107	16	482
106 days,	–	–	1	82	176 days,	–	–	3	35
108 days,	1	13	–	–	177 days,	2	6	1	4
110 days,	1	2	1	26	178 days,	2	32	1	4
111 days,	1	16	–	–	179 days,	2	3	2	103
113 days,	1	5	1	1	180 days,	7	86	8	175
114 days,	–	–	1	8	181 days,	3	80	1	18
115 days,	–	–	2	12	182 days,	4	44	4	51
116 days,	–	–	1	1	183 days,	2	35	1	2
117 days,	1	5	–	–	184 days,	–	–	1	3
120 days,	4	20	4	25	185 days,	2	26	5	266
121 days,	2	45	1	3	186 days,	2	29	–	–

NUMBER OF DAYS IN OPERATION. ALL INDUSTRIES — **1900, 1901** — Concluded.

Days in Operation.	1900		1901		Days in Operation.	1900		1901	
	Establishments	Persons Employed	Establishments	Persons Employed		Establishments	Persons Employed	Establishments	Persons Employed
188 days,	–	–	3	73	258 days,	10	598	17	895
189 days,	2	36	2	26	259 days,	11	452	4	216
190 days,	5	56	1	4	260 days,	31	1,647	24	612
191 days,	6	565	1	9	261 days,	19	1,618	19	1,903
192 days,	6	294	1	8	262 days,	10	3,447	7	174
193 days,	3	2,532	1	82	263 days,	11	333	15	1,000
194 days,	6	1,231	5	933	264 days,	10	745	12	1,294
195 days,	3	27	8	153	265 days,	16	476	15	1,764
196 days,	1	16	3	113	266 days,	15	567	16	1,932
197 days,	3	252	1	5	267 days,	14	854	15	1,799
198 days,	4	65	4	91	268 days,	16	855	20	3,009
199 days,	2	145	–	–	269 days,	12	1,569	12	597
200 days,	18	143	24	953	270 days,	50	3,539	36	1,461
201 days,	3	219	2	12	271 days,	12	421	13	1,802
202 days,	1	28	5	631	272 days,	19	2,919	7	1,042
203 days,	3	44	–	–	273 days,	18	1,069	15	569
204 days,	7	184	2	6	274 days,	7	580	8	1,019
205 days,	4	111	4	20	275 days,	60	3,371	39	2,679
206 days,	4	31	6	359	276 days,	41	4,541	45	2,781
207 days,	5	205	3	11	277 days,	21	2,716	16	917
208 days,	6	266	6	34	278 days,	15	783	23	2,077
209 days,	–	–	1	10	279 days,	22	1,206	23	1,834
210 days,	8	167	8	108	280 days,	73	2,985	81	5,906
211 days,	5	246	–	–	281 days,	23	1,219	30	5,590
212 days,	1	8	3	41	282 days,	49	13,223	46	6,814
213 days,	4	74	7	327	283 days,	21	4,991	17	1,873
214 days,	1	133	2	133	284 days,	18	1,778	17	578
215 days,	6	365	2	81	285 days,	44	4,396	48	3,479
216 days,	5	610	5	53	286 days,	57	3,713	41	3,538
217 days,	3	229	2	66	287 days,	32	1,831	33	3,692
218 days,	3	86	3	164	288 days,	64	4,094	40	4,772
219 days,	3	115	3	96	289 days,	21	2,915	28	2,978
220 days,	4	133	4	77	290 days,	70	5,251	103	7,770
221 days,	4	250	3	89	291 days,	29	8,801	54	7,556
222 days,	5	305	4	42	292 days,	43	4,654	49	9,856
223 days,	8	195	2	59	293 days,	53	8,957	62	6,405
224 days,	4	183	3	301	294 days,	88	10,390	70	6,069
225 days,	27	884	13	495	295 days,	40	5,616	48	5,788
226 days,	2	31	6	232	296 days,	80	9,116	74	9,086
227 days,	3	323	2	46	297 days,	42	4,424	44	3,600
228 days,	15	1,438	14	219	298 days,	52	5,670	59	5,868
229 days,	5	52	9	67	299 days,	57	7,778	64	7,644
230 days,	36	3,974	27	654	300 days,	431	28,074	420	30,487
231 days,	14	457	4	129	301 days,	42	4,656	62	10,649
232 days,	3	168	3	29	302 days,	69	6,016	73	11,196
233 days,	2	86	3	48	303 days,	72	8,474	89	13,536
234 days,	11	221	9	107	304 days,	88	11,879	95	17,091
235 days,	9	380	9	779	305 days,	81	9,963	112	24,497
236 days,	9	920	3	235	306 days,	1,707	129,862	1,717	123,965
237 days,	4	126	4	48	307 days,	15	7,820	9	244
238 days,	4	74	5	1,031	308 days,	9	776	7	834
239 days,	3	29	4	28	309 days,	10	423	2	72
240 days,	21	625	20	2,773	310 days,	4	268	5	102
241 days,	10	333	4	73	311 days,	1	5	4	250
242 days,	8	438	6	86	312 days,	6	77	5	77
243 days,	5	210	4	254	313 days,	10	128	11	150
244 days,	10	1,600	9	269	314 days,	1	5	–	–
245 days,	13	718	6	615	315 days,	1	8	1	8
246 days,	16	565	14	1,127	317 days,	1	77	–	–
247 days,	8	314	7	574	319 days,	–	–	1	45
248 days,	12	314	3	36	320 days,	1	11	1	19
249 days,	4	213	5	125	329 days,	1	33	1	39
250 days,	36	1,109	31	1,011	330 days,	1	4	1	7
251 days,	5	62	8	436	338 days,	–	–	1	1
252 days,	9	437	8	245	339 days,	1	8	1	6
253 days,	10	300	11	3,603	350 days,	1	9	1	5
254 days,	14	695	15	532	360 days,	1	16	–	–
255 days,	7	232	15	1,815	365 days,	1	8	1	10
256 days,	25	1,081	9	195					
257 days,	11	1,175	9	569	Totals,	4,696	386,103	4,696	399,997

Analysis.

In computing the proportion of business done, maximum production, that is to say, the greatest amount of goods that could be turned out with the facilities existing in 1900, is considered 100 per cent, and similarly in 1901. In the 4,696 establishments making return in both years, the average proportion of business done in 1900 is represented by 66.96 per cent and in 1901 by 68.09 per cent.

By reference to the presentation upon pages 101 and 102 it will be noted that, considering the nine leading industries, seven, namely, Boots and Shoes, Carpetings, Leather, Metals and Metallic Goods, Paper, Woollen Goods, and Worsted Goods show greater proportion of business done in 1901 than in 1900, and that two of the nine leading industries, Cotton Goods and Machines and Machinery, show smaller proportion of business done in 1901 than in 1900. In All Industries the increase in proportion of business done in 1901 as against 1900 was 1.69 per cent.

In the head-note to the presentation on pages 101 and 102, it is stated that the average number of days in operation is based not on establishments but upon the average number of persons employed, the number of days being multiplied by the figures representing the average number of persons, and the sum divided by the aggregate average number of persons, thus obtaining an average for each of the industries considered and for All Industries. The average number of days in operation for All Industries in 1900 was 290.88 and in 1901, 292.78, an increase in the latter year of 1.90 days, or 0.65 per cent.

In the following table, we bring forward the data for the nine leading industries and show the increase or decrease in 1901 as compared with 1900:

Industries.	Average Number of Days in Operation		Increase (+) or Decrease (−) in 1901	
	1900	1901	Days	Percentages
Boots and shoes (aggregate),	284.99	290.49	+5.50	+1.93
Factory product,	284.26	290.13	+5.87	+2.07
Soles, heels, and cut stock,	291.10	293.36	+2.26	+0.78
Findings,	294.96	297.70	+2.74	+0.93
Stitching, heeling, etc.,	288.51	292.11	+3.60	+1.25

Industries.	Average Number of Days in Operation		Increase (+) or Decrease (−) in 1901	
	1900	1901	Days	Percentages
Carpetings,	302.52	300.43	−2.09	−0.69
Cotton goods (aggregate),	299.13	296.18	−2.95	−0.99
Woven goods,	298.71	296.08	−2.63	−0.88
Yarn and thread,	301.92	296.55	−5.37	−1.78
Waste,	304.94	305.39	+0.45	+0.15
Leather,	297.18	301.07	+3.89	+1.31
Machines and machinery,	291.94	297.53	+5.59	+1.91
Metals and metallic goods,	293.21	296.09	+2.88	+0.98
Paper,	274.15	287.46	+13.31	+4.86
Woollen goods (aggregate),	292.84	292.60	−0.24	−0.08
Woven goods and yarn,	293.38	292.76	−0.62	−0.21
Shoddy, waste, etc.,	276.53	288.04	+11.51	+4.16
Worsted goods,	275.33	290.83	+15.50	+5.63
Nine industries,	291.88	294.20	+2.32	+0.79
Other industries,	289.00	290.13	+1.13	+0.39
All industries,	290.88	292.78	+1.90	+0.65

With the exceptions of Carpetings, Cotton Goods, and Woollen Goods, each of these nine leading industries shows increase in the average number of days in operation in 1901 as compared with 1900, Worsted Goods leading, with a gain of 15.50 days, or 5.63 per cent. The decreases shown are comparatively small, being less than a full day in Woollen Goods, slightly over two days in the carpeting industry, and about three days in Cotton Goods.

From the presentation on pages 103 and 104, which shows for All Industries the number of establishments running a specified number of days together with the average number of persons employed therein, we are enabled to prepare the following table showing the running time by periods:

Classification of Days in Operation.	Number of Establishments		Percentages	
	1900	1901	1900	1901
Under 76 days,	22	24	0.47	0.51
76 but under 152 days,	98	102	2.09	2.17
152 but under 229 days,	301	277	6.41	5.90
229 but under 256 days,	288	246	6.13	5.24
256 but under 281 days,	549	500	11.69	10.65
281 but under 306 days,	1,666	1,778	35.48	37.86
306 days and over,	1,772	1,769	37.73	37.67
Totals,	4,696	4,696	100.00	100.00

The total number of working days in the year, exclusive of Sundays and holidays, was 306. Some of the establishments ran more than 306 days, and therefore were in operation not only upon working days but upon either holidays or Sundays. From this table it appears that 37.73 per cent of all the establishments were in operation during the entire year in 1900 and 37.67 per cent in 1901. In 1901, 0.51 per cent of the establishments ran less than three months, 2.17 per cent three months but less than six months, 5.90 per cent six months but less than nine months, 5.24 per cent nine months but less than ten months, 10.65 per cent ten months but less than eleven months, 37.86 per cent eleven months but less than twelve months, and 37.67 per cent twelve months.

In 1900, 54.41 per cent of all the establishments ran 300 days and over. The corresponding percentage for 1901 was 55.79. Allowing six days for a vacation and excluding Sundays and holidays, it may be considered that over one-half of the establishments were in operation during the entire year. In the following table, we show the possible working time in comparison with the actual running time.

Classification of Yearly Working Time.	Number of Establishments Considered	Number of Days	
		1900	1901
Possible working time,	4,696	1,436,976	1,436,976
Actual running time,	4,696	1,326,385	1,330,826
Lost time,	4,696	110,591	106,150
Percentage of actual running time of possible working time,	4,696	92.30	92.61

The aggregate number of possible working days for the 4,696 establishments was 1,436,976. The actual running time, based upon the number of days in operation as returned by each establishment, amounted to 1,326,385 days in 1900 and 1,330,826 in 1901. This indicates that the actual number of days lost, due to various causes, such as vacations, repairs, strikes, etc., was 110,591 in 1900 and 106,150 in 1901. The lost time, expressed in percentages, is very slight, being 7.70 in 1900 and 7.39 in 1901. The establishments, as a whole, covered 92.30 per cent of the entire working time for the year in 1900 and 92.61 per cent in 1901.

General Summary of Industrial Conditions.

In the following table, we bring forward the data relating to All Industries drawn from the several presentations for 1900 and 1901:

Classification.	1900	1901	Increase (+) or Decrease (−) in 1901	
			Amounts	Percentages
Number of establishments considered,	4,696	4,696	-	-
Number of private firms,	3,323	3,262	−61	−1.84
Number of corporations,	1,225	1,272	+47	+3.84
Number of industrial combinations,	19	20	+1	+5.26
Number of partners,	5,218	5,091	−127	−2.43
Males,	4,951	4,828	−123	−2.48
Females,	168	172	+4	+2.38
Special and estates,	99	91	−8	−8.08
Number of stockholders,	47,410	49,038	+1,628	+3.43
Males,	26,584	27,360	+776	+2.92
Females,	15,602	16,353	+751	+4.81
Banks, trustees, etc.,	5,224	5,325	+101	+1.93
Average partners to a private firm,	1.57	1.56	−0.01	−0.64
Average stockholders to a corporation,	38.70	38.55	−0.15	−0.39
Capital devoted to production,	$462,101,015	$478,075,904	+$15,974,889	+3.46
Value of stock used,	$471,452,564	$503,326,395	+$31,873,831	+6.76
Value of goods made and work done,	$825,540,858	$869,771,876	+$44,231,018	+5.36
Persons employed:				
Average number,	386,103	399,997	+13,894	+3.60
Males,	258,682	269,324	+10,642	+4.11
Females,	127,421	130,673	+3,252	+2.55
Smallest number,	322,200	339,405	+17,205	+5.34
Greatest number,	440,363	456,137	+15,774	+3.58
Excess of greatest over smallest,	118,163	116,732	−1,431	−1.21
Total amount paid in wages,	$170,505,516	$179,851,715	+$9,346,199	+5.48
Average yearly earnings (without regard to sex or age),	$441.61	$449.63	+$8.02	+1.82
Males,*	$530.82	$542.23	+$11.41	+2.15
Females,*	$334.70	$342.68	+$7.98	+2.38
Young persons,*	$228.33	$231.85	+$3.52	+1.54
Average proportion of business done,	66.96	68.09	+1.13	+1.69
Average number of days in operation,	290.88	292.78	+1.90	+0.65

* Estimated.

The changes in each of the elements summarized in the foregoing table when reduced to the basis of percentages are at

once apparent. These changes, of course, indicate improvement in the condition of the industries, in the aggregate, in 1901 as compared with 1900. The decrease in the number of private firms, it should be borne in mind, is due to changes from an individual or partnership basis to that of the corporation on the part of establishments making return in each year. The same reason accounts for the increase in the number of corporations and industrial combinations.

These reports are rendered by identical establishments in each year, and in the 4,696 returns considered in this volume, capital devoted to production increased 3.46 per cent, value of stock used increased 6.76 per cent, and the value of goods made and work done increased 5.36 per cent.

The average number of persons employed exhibits an increase of 3.60 per cent and the total amount paid in wages shows an increase of 5.48 per cent. The range of unemployment was narrower in 1901 than in 1900. An increase is shown in the average yearly earnings.

From the percentages of increase and decrease in the value of goods made and work done as shown for 4,696 establishments on pages 65 and 66, we estimate the value of product in *all* the establishments engaged in manufacturing and mechanical industries of the State. The figures are presented in the following table:

Estimated Value of Goods Made and Work Done — **1901.**

Industries.	Value of Goods Made and Work Done
Agricultural implements,	$1,317,946
Arms and ammunition,	3,824,233
Artisans' tools,	3,990,632
Awnings, sails, tents, etc.,	746,317
Bicycles, tricycles, etc.,	2,085,303
Boots and shoes,	161,916,863
Boxes, barrels, kegs, etc.,	6,140,785
Boxes (paper),	2,975,258
Brick, tiles, and sewer pipe,	1,601,616
Brooms, brushes, and mops,	2,046,275
Building,	77,953,370
Building materials,	2,630,689
Burial caskets, coffins, etc.,	722,190
Buttons and dress trimmings,	953,674

Estimated Value of Goods Made and Work Done — **1901** — Continued.

Industries.	Value of Goods Made and Work Done
Carpetings,	$8,211,483
Carriages and wagons,	8,168,453
Cement, kaolin, lime, and plaster,	518,039
Chemical preparations (compounded),	2,163,453
Clocks and watches,	3,697,588
Clothing,	47,764,304
Cooking, lighting, and heating apparatus,	4,394,580
Cordage and twine,	9,517,435
Cotton goods,	118,324,361
Crayons, pencils, crucibles, etc.,	169,430
Drugs and medicines,	6,481,533
Dyestuffs,	555,282
Earthen, plaster, and stone ware,	512,459
Electrical apparatus and appliances,	12,671,730
Electroplating,	289,214
Emery and sand paper and cloth, etc.,	1,079,221
Fancy articles, etc.,	990,802
Fertilizers,	2,304,662
Fine arts and taxidermy,	55,214
Fireworks and matches,	152,799
Flax, hemp, and jute goods,	5,145,716
Food preparations,	102,332,213
Furniture,	19,300,301
Gas and residual products,	7,891,317
Glass,	368,193
Glue, isinglass, and starch,	1,442,001
Hair work (animal and human),	341,283
Hose and belting: rubber, linen, etc.,	568,391
Hosiery and knit goods,	7,562,698
Ink, mucilage, and paste,	594,572
Ivory, bone, shell, and horn goods, etc.,	2,377,768
Jewelry,	10,418,487
Leather,	27,196,840
Leather goods,	3,645,440
Liquors (bottled) and carbonated beverages,	2,556,054
Liquors (malt),	11,583,541
Liquors (distilled),	2,969,024
Lumber,	5,245,421
Machines and machinery,	58,450,114
Metals and metallic goods,	57,565,968
Models, lasts, and patterns,	1,388,930
Musical instruments and materials,	7,338,178
Oils and illuminating fluids,	2,876,162

Estimated Value of Goods Made and Work Done — **1901** — Concluded.

Industries.	Value of Goods Made and Work Done
Paints, colors, and crude chemicals,	$1,756,057
Paper,	24,577,022
Paper goods,	8,789,367
Perfumes, toilet articles, etc.,	263,773
Photographs and photographic materials,	2,297,320
Polishes and dressing,	2,547,919
Printing, publishing, and bookbinding,	27,453,013
Print works, dye works, and bleacheries,	27,084,794
Railroad construction and equipment,	4,060,338
Rubber and elastic goods,	32,613,258
Saddlery and harness,	1,529,135
Scientific instruments and appliances,	2,589,526
Shipbuilding,	3,590,161
Silk and silk goods,	5,243,678
Sporting and athletic goods,	731,339
Stone,	6,028,115
Straw and palm leaf goods,	5,198,685
Tallow, candles, soap, and grease,	4,930,281
Tobacco, snuff, and cigars,	5,546,321
Toys and games (children's),	733,756
Trunks and valises,	181,851
Whips, lashes, and stocks,	1,531,966
Wooden goods,	3,372,557
Woollen goods,	42,594,922
Worsted goods,	41,627,419
All Industries,	$1,092,958,378

It should be borne in mind that while the above figures are estimates, they are based upon returns made by the representative establishments of the Commonwealth. In other words, had a complete Census been taken on December 31, 1901, the aggregate value of the product in all the establishments would have approximated $1,092,958,378, and the value of the output in the several industries would have approximated the figures shown for them in the above table.

The next table brings forward for the nine leading industries the value of goods made, stock used, and wages paid, together with the industry product and the profit and minor expense fund for the year 1901.

Industries.	Value of Goods Made	Value of Stock Used	Industry Product	Paid in Wages	Profit and Minor Expense Fund
Boots and shoes,	$142,275,334	$89,986,147	$52,289,187	$30,096,415	$22,192,772
Carpetings,	8,211,483	4,702,924	3,508,559	1,802,452	1,706,107
Cotton goods,	117,078,409	69,529,298	47,549,111	32,617,806	14,931,305
Leather,	25,896,712	18,992,763	6,903,949	3,163,880	3,740,069
Machines and machinery,	49,136,267	17,820,367	31,315,900	15,171,118	16,144,782
Metals and metallic goods,	46,753,140	24,785,236	21,967,904	12,451,457	9,516,447
Paper,	24,344,202	13,605,791	10,738,411	4,157,628	6,580,783
Woollen goods,	42,594,922	24,194,838	18,400,084	8,894,618	9,505,466
Worsted goods,	39,672,642	24,763,567	14,909,075	6,314,431	8,594,644

It is proper to explain the meaning of "industry product" and "profit and minor expense fund," designations used in the above table. By industry product is meant the actual result of the productive forces of the industry, that is, the added value created above the value of stock and materials consumed. This value is obtained by deducting from the total value of goods made the cost value of stock used, the difference being the added value or actual product due to the industry. In the division of the proceeds of each industry, one part of the industry product is paid to the labor force in the form of wages, this being labor's share of the product. The balance constitutes a fund from which are paid freights, insurance, interest on loans (credit capital), interest on stock (fixed or invested capital), rents, taxes, commissions, salaries, etc., in fact, all expenses other than those for stock and wages. The remainder, if any, is the profit of the employer. The entire balance of the industry product remaining after the deduction of the amount paid in wages, becomes a profit and minor expense fund, and is thus designated in the table. Of course, it will be understood that the term "minor expense" is relative. The expenses, some of which we have enumerated, paid out of this balance, are in themselves considerable in amount, and are only to be classed as "minor" in comparison with the generally larger amounts expended for stock and materials and wages.

The next table presents, for the year 1901, the actual product for $1,000 of capital devoted to production in each of the nine leading industries, the average product per employé, the percentages of industry product paid in wages, and the percentages devoted to other expenses:

Industries.	Capital Devoted to Production	Average Persons Employed	Industry Product		Percentages of Industry Product	
			Per $1,000 of Capital	Average per Employé	Devoted to Profit and Minor Expenses	Paid in Wages
Boots and shoes,	$27,327,544	62,329	$1,913.42	$838.92	42.44	57.56
Carpetings,	5,957,590	4,573	588.92	767.23	48.63	51.37
Cotton goods,	126,845,729	89,669	374.86	530.27	31.40	68.60
Leather,	8,705,176	6,601	793.09	1,045.89	54.17	45.83
Machines and machinery,	40,707,639	27,508	769.29	1,138.43	51.55	48.45
Metals and metallic goods,	23,793,479	22,295	923.27	985.33	43.32	56.68
Paper,	20,012,943	9,383	536.57	1,144.45	61.28	38.72
Woollen goods,	25,791,680	22,076	713.41	833.49	51.66	48.34
Worsted goods,	15,831,665	16,196	941.73	920.54	57.65	42.35

The largest product per $1,000 of capital devoted to production is found in Boots and Shoes, namely, $1,913.42. No other industry approaches this figure. The nearest to it, however, is Worsted Goods, the industry product being $941.73. Following this industry ranks Metals and Metallic Goods, in which the industry product is $923.27. Next come Leather, Machines and Machinery, and Woollen Goods, in which the industry products are $793.09, $769.29, and $713.41, respectively. Carpetings and Paper follow, with an industry product of $588.92 and $536.57, respectively. Cotton Goods finds last place with an industry product per $1,000 of capital devoted to production of $374.86.

These figures afford an indication of the efficiency of the capital devoted to production in these industries during 1901, and those which present the average industry product per employé may be considered as indicating the efficiency of labor. With respect to this point, Paper leads the other industries, the average product per employé being $1,144.45. Closely following, however, are Machines and Machinery and Leather in which averages of $1,138.43 and $1,045.89, respectively, appear. Metals and Metallic Goods and Worsted Goods show averages of $985.33 and $920.54, respectively, and are followed by Boots and Shoes ($838.92), Woollen Goods ($833.49), Carpetings ($767.23), and Cotton Goods ($530.27).

When the percentage of industry product paid in wages is considered, Cotton Goods leads, the percentage being 68.60. No other industry approaches this within 10 per cent, the

nearest being Boots and Shoes with a percentage of 57.56, followed by Metals and Metallic Goods with a percentage of 56.68, and Carpetings, in which the percentage is 51.37. Next ranks Machines and Machinery, the percentage being 48.45, and, in turn, Woollen Goods, Leather, Worsted Goods, and Paper, in which the percentages are 48.34, 45.83, 42.35, and 38.72, respectively. These percentages of industry product paid in wages are the complements of the percentages of industry product devoted to profit and minor expenses, these two items aggregating 100 per cent, or the whole of the industry product.

In the following presentation, the rank of the different industries in 1901, as regards the amount of industry product per $1,000 of capital devoted to production, is compared with the rank of the same industries for 1900, as derived from the report on Annual Statistics of Manufactures for that year:

1900.	1901.
Boots and Shoes.	Boots and Shoes.
Metals and Metallic Goods.	Worsted Goods.
Worsted Goods.	Metals and Metallic Goods.
Machines and Machinery.	Leather.
Leather.	Machines and Machinery.
Woollen Goods.	Woollen Goods.
Carpetings.	Carpetings.
Cotton Goods.	Paper.
Paper.	Cotton Goods.

All of the industries changed from the position held in 1900 except Boots and Shoes, Woollen Goods, and Carpetings.

With respect to the average industry product per employé the rank of the industries in each of the years appears as follows:

1900.	1901.
Machines and Machinery.	Paper.
Paper.	Machines and Machinery.
Metals and Metallic Goods.	Leather.
Leather.	Metals and Metallic Goods.
Worsted Goods.	Worsted Goods.
Boots and Shoes.	Boots and Shoes.
Woollen Goods.	Woollen Goods.
Carpetings.	Carpetings.
Cotton Goods.	Cotton Goods.

The first four industries exchanged places with each other in 1901 as compared with 1900, while the other five held the same rank in both of the years.

The next comparison relates to the industry product paid in wages, the industries ranking as follows:

1900.	1901.
Carpetings.	Cotton Goods.
Boots and Shoes.	Boots and Shoes.
Cotton Goods.	Metals and Metallic Goods.
Metals and Metallic Goods.	Carpetings.
Leather.	Machines and Machinery.
Machines and Machinery.	Woollen Goods.
Woollen Goods.	Leather.
Worsted Goods.	Worsted Goods.
Paper.	Paper.

The only industries retaining the same rank in 1901 as obtained in 1900 are Boots and Shoes, Worsted Goods, and Paper.

In consideration of the question of possible profits, we show, in the following pages, a series of tables for the nine leading industries comparing 1901 with 1900. The first relates to Boots and Shoes.

Boots and Shoes. [Comparison for 692 Establishments.]

Classification.	1900	1901
Amount of capital devoted to production,	$25,550,748	$27,327,544
Value of goods made and work done (gross product),	$125,471,177	$142,275,334
Value of stock used and other materials consumed in production,	$78,914,923	$89,986,147
Industry product (gross product less value of stock and materials),	$46,556,254	$52,289,187
Wages (labor's direct share of product),	$26,502,961	$30,096,415
Profit and minor expense fund (industry product less wages),	$20,053,293	$22,192,772
Percentage of industry product paid in wages,	56.93	57.56
Percentage of industry product devoted to profit and minor expenses,	43.07	42.44
Percentage of profit and minor expense fund of capital devoted to production,	78.48	81.21

The percentage of industry product paid in wages in 1900 was 56.93, and in 1901, 57.56, an increase in the last named year. Of course, the percentage of industry product devoted

to profit and minor expenses shows a decrease in 1901 as compared with 1900, it being the complement of the percentage of industry product paid in wages. The percentage which this profit and minor expense fund formed of capital devoted to production was 81.21 in 1901 as against 78.48 in 1900; that is to say, a larger portion of the amount remaining in this industry, after eliminating the cost of stock and materials, was devoted to wages in 1901 than in 1900, leaving a slightly smaller amount for the payment of expenses (other than wages and materials) and for profit, and this amount formed a larger percentage of the total capital devoted to production in the industry in 1901 than in 1900. On the basis of these percentages, therefore, conditions were slightly more favorable for the workman in 1901 than for the employer.

A similar comparison for Carpetings follows:

Carpetings. [Comparison for 9 Establishments.]

Classification.	1900	1901
Amount of capital devoted to production,	$6,045,740	$5,957,590
Value of goods made and work done (gross product),	$8,398,602	$8,211,483
Value of stock used and other materials consumed in production,	$5,351,326	$4,702,924
Industry product (gross product less value of stock and materials),	$3,047,276	$3,508,559
Wages (labor's direct share of product),	$1,681,974	$1,802,452
Profit and minor expense fund (industry product less wages),	$1,365,302	$1,706,107
Percentage of industry product paid in wages,	55.20	51.37
Percentage of industry product devoted to profit and minor expenses,	44.80	48.63
Percentage of profit and minor expense fund of capital devoted to production,	22.58	28.64

Unlike Boots and Shoes, in this industry the percentage of industry product paid in wages shows a decline from 55.20 in 1900 to 51.37 in 1901, while a corresponding increase appears in the percentage of industry product devoted to profit and minor expenses. The percentage of profit and minor expense fund of capital was 22.58 in 1900 as against 28.64 in 1901.

The next table presents a comparison for Cotton Goods.

Cotton Goods. [Comparison for 157 Establishments.]

Classification.	1900	1901
Amount of capital devoted to production,	$128,351,346	$126,845,729
Value of goods made and work done (gross product),	$124,086,810	$117,078,409
Value of stock used and other materials consumed in production,	$65,573,721	$69,529,298
Industry product (gross product less value of stock and materials),	$58,513,089	$47,549,111
Wages (labor's direct share of product),	$32,997,457	$32,617,806
Profit and minor expense fund (industry product less wages),	$25,515,632	$14,931,305
Percentage of industry product paid in wages,	56.39	68.60
Percentage of industry product devoted to profit and minor expenses,	43.61	31.40
Percentage of profit and minor expense fund of capital devoted to production,	19.88	11.77

In this industry, the percentages of industry product paid in wages rose from 56.39 in 1900 to 68.60 in 1901. Of course, the percentage devoted to profit and minor expenses correspondingly declined from 43.61 in 1900 to 31.40 in 1901. The profit and minor expense fund formed 19.88 per cent of capital devoted to production in 1900 and 11.77 per cent in 1901.

The next table relates to Leather.

Leather. [Comparison for 100 Establishments.]

Classification.	1900	1901
Amount of capital devoted to production,	$7,798,458	$8,705,176
Value of goods made and work done (gross product),	$22,355,846	$25,896,712
Value of stock used and other materials consumed in production,	$16,982,441	$18,992,763
Industry product (gross product less value of stock and materials),	$5,373,405	$6,903,949
Wages (labor's direct share of product),	$2,857,736	$3,163,880
Profit and minor expense fund (industry product less wages),	$2,515,669	$3,740,069
Percentage of industry product paid in wages,	53.18	45.83
Percentage of industry product devoted to profit and minor expenses,	46.82	54.17
Percentage of profit and minor expense fund of capital devoted to production,	32.26	42.96

The percentages of industry product paid in wages in this industry in 1900 and 1901 were 53.18 and 45.83, respectively, a decrease in the last named year. Deducting wages, the fund

devoted to profit and minor expenses rose from 46.82 per cent in 1900 to 54.17 per cent in 1901, and this fund formed 42.96 per cent of capital devoted to production in 1901 as against 32.26 per cent in 1900.

The next table presents a comparison for Machines and Machinery.

Machines and Machinery. [Comparison for 356 Establishments.]

Classification.	1900	1901
Amount of capital devoted to production,	$38,389,950	$40,707,639
Value of goods made and work done (gross product),	$49,260,905	$49,136,267
Value of stock used and other materials consumed in production,	$18,163,148	$17,820,367
Industry product (gross product less value of stock and materials),	$31,097,757	$31,315,900
Wages (labor's direct share of product),	$15,559,916	$15,171,118
Profit and minor expense fund (industry product less wages),	$15,537,841	$16,144,782
Percentage of industry product paid in wages,	50.04	48.45
Percentage of industry product devoted to profit and minor expenses,	49.96	51.55
Percentage of profit and minor expense fund of capital devoted to production,	40.47	39.66

As in the preceding industry, a decrease in the percentage of industry product paid in wages appears, the percentage being 48.45 in 1901 as against 50.04 in 1900. The percentage of industry product devoted to profit and minor expenses shows an increase from 49.96 in 1900 to 51.55 in 1901, and a decrease is found in the percentage of profit and minor expense fund of the capital devoted to production, 40.47 in 1900 as against 39.66 in 1901.

A comparison for Metals and Metallic Goods follows:

Metals and Metallic Goods. [Comparison for 368 Establishments.]

Classification.	1900	1901
Amount of capital devoted to production,	$22,858,783	$23,793,479
Value of goods made and work done (gross product),	$41,011,205	$46,753,140
Value of stock used and other materials consumed in production,	$21,976,723	$24,785,236
Industry product (gross product less value of stock and materials),	$19,034,482	$21,967,904
Wages (labor's direct share of product),	$11,099,780	$12,451,457
Profit and minor expense fund (industry product less wages),	$7,934,702	$9,516,447

Metals and Metallic Goods. [Comparison for 368 Establishments] —Concluded.

Classification.	1900	1901
Percentage of industry product paid in wages,	58.31	56.68
Percentage of industry product devoted to profit and minor expenses,	41.69	43.32
Percentage of profit and minor expense fund of capital devoted to production,	34.71	40.00

In this industry, the percentage of industry product paid in wages declined from 58.31 in 1900 to 56.68 in 1901. The percentage of industry product devoted to profit and minor expenses rose correspondingly from 41.69 in 1900 to 43.32 in 1901. The percentage of profit and minor expense fund of capital devoted to production rose from 34.71 in 1900 to 40 in 1901.

The facts for Paper are shown in the next table.

Paper. [Comparison for 75 Establishments.]

Classification.	1900	1901
Amount of capital devoted to production,	$19,826,756	$20,012,943
Value of goods made and work done (gross product),	$21,835,119	$24,344,202
Value of stock used and other materials consumed in production,	$12,573,366	$13,605,791
Industry product (gross product less value of stock and materials),	$9,261,753	$10,738,411
Wages (labor's direct share of product),	$3,792,941	$4,157,628
Profit and minor expense fund (industry product less wages),	$5,468,812	$6,580,783
Percentage of industry product paid in wages,	40.95	38.72
Percentage of industry product devoted to profit and minor expenses,	59.05	61.28
Percentage of profit and minor expense fund of capital devoted to production,	27.58	32.88

In this industry, the percentage of industry product paid in wages fell from 40.95 in 1900 to 38.72 in 1901, while the percentage of industry product devoted to profit and minor expenses rose from 59.05 in 1900 to 61.28 in 1901, accompanied by an increase which the percentage of profit and minor expense fund formed of capital devoted to production, namely, 27.58 in 1900 as against 32.88 in 1901.

The next table relates to Woollen Goods.

Woollen Goods. [Comparison for 148 Establishments.]

Classification.	1900	1901
Amount of capital devoted to production,	$26,500,393	$25,791,680
Value of goods made and work done (gross product),	$40,865,404	$42,594,922
Value of stock used and other materials consumed in production,	$23,887,476	$24,194,838
Industry product (gross product less value of stock and materials),	$16,977,928	$18,400,084
Wages (labor's direct share of product),	$8,563,043	$8,894,618
Profit and minor expense fund (industry product less wages),	$8,414,885	$9,505,466
Percentage of industry product paid in wages,	50.44	48.34
Percentage of industry product devoted to profit and minor expenses,	49.56	51.66
Percentage of profit and minor expense fund of capital devoted to production,	31.75	36.85

In this industry, also, there is noted a falling off in the percentage of industry product paid in wages, which fell from 50.44 in 1900 to 48.34 in 1901, accompanied by an increase in the percentage of industry product devoted to profit and minor expenses, which rose from 49.56 in 1900 to 51.66 in 1901. The percentage of profit and minor expense fund of capital devoted to production also shows an increase in 1901 as against 1900, the figures being 36.85 and 31.75, respectively.

The final comparison covers the facts for Worsted Goods.

Worsted Goods. [Comparison for 38 Establishments.]

Classification.	1900	1901
Amount of capital devoted to production,	$15,588,639	$15,831,665
Value of goods made and work done (gross product),	$32,805,027	$39,672,642
Value of stock used and other materials consumed in production,	$19,947,194	$24,763,567
Industry product (gross product less value of stock and materials),	$12,857,833	$14,909,075
Wages (labor's direct share of product),	$5,427,372	$6,314,431
Profit and minor expense fund (industry product less wages),	$7,430,461	$8,594,644
Percentage of industry product paid in wages,	42.21	42.35
Percentage of industry product devoted to profit and minor expenses,	57.79	57.65
Percentage of profit and minor expense fund of capital devoted to production,	47.67	54.29

A slight increase in the percentage of industry product paid in wages is found in this industry, namely, 42.21 in 1900 as against 42.35 in 1901. The percentage of industry product

devoted to profit and minor expenses shows an equally small decrease from 57.79 in 1900 to 57.65 in 1901, while the percentage of profit and minor expense fund of capital devoted to production rose from 47.67 in 1900 to 54.29 in 1901.

Condensed Statements.

On the basis of the reports made by the 4,696 representative establishments, the following condensed general statements may be made regarding the manufacturing and mechanical industries in the Commonwealth for the years 1900 and 1901:

Capital Devoted to Production.

The increase in capital devoted to production in 1901 as compared with 1900 in All Industries amounted to 3.46 per cent. This increase does not necessarily imply an investment of more money in industrial enterprises, nor, on the other hand, does a decrease imply the withdrawal of capital, since there are various elements by which it is affected. For example, a small amount of stock on hand or in process of manufacture at the time the return is made would have its effect in showing diminished capitalization, without, of course, affecting the condition of the industry; and, on the other hand, an investment in stock purchased in a favorable market, the same being held at the time of making the return, would render the amount of capital relatively larger than would be found at a time when the stock on hand was comparatively light.

Concerning the nine leading industries, the following facts appear: Boots and Shoes shows an increase in capital devoted to production of 6.95 per cent; Leather, 11.63 per cent; Machines and Machinery, 6.04 per cent; Metals and Metallic Goods, 4.09 per cent; Paper, 0.94 per cent; and Worsted Goods, 1.56 per cent. A decrease in amount of capital devoted to production is shown in Carpetings of 1.46 per cent; Cotton Goods, 1.17 per cent; and Woollen Goods, 2.67 per cent. The aggregate for the nine leading industries exhibits an increase of 1.40 per cent.

Stock and Materials Used.

Considered in the aggregate, the value of stock and materials used in All Industries in 1901 shows an increase of 6.76 per

cent as compared with 1900. Boots and Shoes shows an increase of 14.03 per cent; Cotton Goods, 6.03 per cent; Leather, 11.84 per cent; Metals and Metallic Goods, 12.78 per cent; Paper, 8.21 per cent; Woollen Goods, 1.29 per cent; and Worsted Goods, 24.14 per cent. Carpetings and Machines and Machinery show percentages of decrease of 12.12 and 1.89, respectively. The increase in the value of stock used in the nine leading industries in the aggregate was 9.50 per cent.

Goods Made and Work Done.

The aggregate value of goods made and work done in All Industries in 1901 as compared with 1900 shows an increase of 5.36 per cent. In six of the nine leading industries percentages of increase are shown as follows: Boots and Shoes, 13.39; Leather, 15.84; Metals and Metallic Goods, 14; Paper, 11.49; Woollen Goods, 4.23; and Worsted Goods, 20.93. Carpetings shows a decrease of 2.23 per cent, Cotton Goods, 5.65 per cent, and Machines and Machinery, 0.25 per cent. The aggregate increase for the nine leading industries was 6.41 per cent.

On the basis of the returns made by these 4,696 establishments, supposing a complete canvass of all establishments engaged in manufacturing and mechanical industries to have been made in 1901, the value of goods made and work done for the nine leading industries would have been, approximately, as follows:

Boots and Shoes	*$161,916,863*
Carpetings	*8,211,483*
Cotton Goods	*118,324,361*
Leather	*27,196,840*
Machines and Machinery	*58,450,114*
Metals and Metallic Goods	*57,565,968*
Paper	*24,577,022*
Woollen Goods	*42,594,922*
Worsted Goods	*41,627,419*

On the same basis, the estimated value of goods made and work done for the State during the year 1901 is $1,092,958,378.

Persons Employed.

The increase in the average number of persons employed in All Industries in 1901 as compared with 1900 was 3.60 per cent. An increase is also shown in the smallest number of persons employed of 5.34 per cent and in the greatest number of persons employed of 3.58 per cent, with a range of unemployment narrower in 1901 than in 1900 by 1,431 persons, or 1.21 per cent. In seven of the nine leading industries increase in the average number of persons employed appears as follows: Boots and Shoes, 9.46 per cent; Carpetings, 5.61 per cent; Leather, 12.20 per cent; Metals and Metallic Goods, 7.91 per cent; Paper, 4.57 per cent; Woollen Goods, 2.50 per cent; and Worsted Goods, 13.31 per cent. In the other two of the nine leading industries decreases are shown; Cotton Goods, 1.47 per cent, and Machines and Machinery, 2.91 per cent. The average number of males employed in All Industries increased 4.11 per cent and females 2.55 per cent.

Wages Paid.

The total amount paid in wages in the 4,696 establishments increased 5.48 per cent in 1901 as compared with 1900. In seven of the nine leading industries the following percentages of increase appear: Boots and Shoes, 13.56; Carpetings, 7.16; Leather, 10.71; Metals and Metallic Goods, 12.18; Paper, 9.61; Woollen Goods, 3.87; and Worsted Goods, 16.34. In the other two industries the following percentages of decrease appear: Cotton Goods, 1.15, and Machines and Machinery, 2.50.

Average Yearly Earnings.

The average yearly earnings per individual, without regard to sex or age, was $441.61 in 1900, and $449.63 in 1901, an increase of $8.02, or 1.82 per cent in the latter year. The range from highest to lowest average, in 1901, was from $816.32 in Liquors (Malt) to $320.45 in Flax, Hemp, and Jute Goods. The higher earnings rule in the industries demanding greater skill and employing males chiefly, and the lower in factory industries employing a large proportion of

females and young persons. The estimated average amount earned during 1901 by adult males is $542.23; adult females, $342.68; and young persons, $231.85.

Working Time and Proportion of Business Done.

Each of the employés worked on an average 290.88 days in 1900 and 292.78 days in 1901, an increase of 1.90 days, or 0.65 per cent. The average proportion of business done reached 66.96 per cent in 1900 and 68.09 per cent in 1901 of the full productive capacity of the 4,696 establishments, an increase in the latter year of 1.69 per cent.

Part III.

COMPARISONS: 1895, 1900.

Part III.

COMPARISONS: 1895, 1900.

The statistical presentations given on the following pages, so far as they relate to the year 1900, have been derived from the advance bulletins issued by the United States Census Office, and cover the returns for Massachusetts for the Twelfth Federal Census.

In order that the figures for the Census of 1900 might be compared on the same basis with those for 1890, the Federal Census Office omitted from their comparative presentations the returns of 2,773 establishments in each of which the value of goods made and work done was *less* than $500 annually, and confined such presentations to 29,180 establishments, each of which produced *more* than $500 annually. In the comparisons in this Part, we are necessarily obliged to omit the capital invested, value of stock used, product, persons employed, etc., in these 2,773 establishments, except for the first table, in which they are included, and which shows conditions in 1895 and 1900 on identical lines. As the aggregate results for these 2,773 establishments are relatively small, the comparisons for the different industries in detail are not materially affected by the omission.

Classification.	1895	1900
Number of establishments,	26,265	31,953
Number of proprietors, firm members, etc.,	30,370	34,790
Amount of capital invested,	$516,082,557	$826,160,280
Value of stock and materials used,	$461,254,353	$552,919,846
Value of goods made and work done,	$849,807,302	$1,035,953,355
Average number of persons employed (wage earners),	432,272	498,208
Total amount paid in wages,	$192,970,059	$228,289,763
Number of salaried persons employed,	18,823	27,860
Total amount paid in salaries,	$23,812,542	$31,257,630

An increase in each of the items is to be noted in the preceding figures. Since 1895, the number of separate establishments has increased 5,688, or 21.66 per cent; capital invested shows an increase of $310,077,723, or 60.08 per cent; value of stock used, an increase of $91,665,493, or 19.87 per cent; value of goods made and work done, an increase of $186,146,053, or 21.90 per cent; the average number of persons employed of both sexes and all ages increased 65,936, or 15.25 per cent; and the total amount paid in wages to these same persons increased $35,319,704, or 18.30 per cent.

We next distribute the facts concerning the 31,953 establishments into the following table. The first column presents data for 2,773 establishments in each of which the annual product was less than $500; the second, for 15,358 establishments in which repairing was carried on, or where hand tools as distinct from machinery were used; and the third, for 13,822 establishments carrying on business more distinctively in the line of manufacturing as usually understood, such as factories, mills, and shops dependent on power machinery.

Classification.	Establishments Producing Less than $500 Annually	Hand Trades	All Others
Number of establishments,	2,773	15,358	13,822
Number of proprietors, firm members, etc.,	2,865	16,753	15,172
Amount of capital invested,	$2,895,993	$31,693,758	$791,570,529
Value of stock or materials used,	$201,891	$43,169,209	$509,548,746
Purchased in a raw state,	$12,603	$592,472	$155,412,755
Partly manufactured,	$189,288	$41,734,898	$336,187,090
Fuel, freight, etc.,	–	$841,839	$17,948,901
Value of goods made and work done,	$754,366	$106,342,947	$928,856,042
Average number of persons employed,	760	52,155	445,203
Total amount paid in wages,	$49,321	$29,100,619	$199,139,823

These figures are of interest as supporting the statement made by this Department in 1885, that the collection of schedules from the establishments classed under "mechanical industries," or hand trades, was of relatively small value in determining the product of the State. Nearly one-half of the aggregate number of establishments returned in 1900

comprised those classed under "Hand Trades," and these employed scarcely four per cent (3.84) of the total capital invested, and produced but a little more than ten per cent (10.27) of the aggregate product. Only ten and one-half per cent (10.47) of the total number of persons were employed in these establishments, and they received but about 13 per cent (12.75) of the aggregate amount paid in wages during the year. When we consider the establishments each producing less than $500 a year, we find that 2,773 establishments (less than 10 per cent) had but 35/100ths of the total capital invested, produced but 7/100ths of the aggregate product, employed but 15/100ths of the total average number of persons, and paid but 2/100ths of the aggregate amount disbursed in wages.

An interesting point brought out in the preceding table is the character of the stock or materials used. Nearly all of the stock, as shown by each of the three columns, is purchased in a partly manufactured state, the use of raw stock, upon which a minimum amount of labor has been previously expended, being relatively small in comparison with the aggregate amount of stock returned. To show this more clearly the following figures are introduced:

Classification of Stock Used.	Amounts	Percentages
Purchased in a raw state,	$156,017,830	28.22
Purchased in a partly manufactured state,	378,111,276	68.38
Fuel, freight, supplies, etc.,	18,790,740	3.40

In other words, out of every $100 expended for stock and materials, $28.22 is paid for stock in a raw state upon which considerable labor must be expended to get it into condition for manufacturing, $68.38 is paid for stock in a partly manufactured state upon which a considerable amount of labor has already been expended to put it into condition for manipulation, and $3.40 is paid for supplies of all kinds, fuel, etc.

The following table shows a classification of the expenses of the 29,180 establishments doing business in the Commonwealth in 1900 as reported by the Federal Census Office:

Classification.	Amounts	Percentages
Value of stock used, including freight, fuel, and supplies,	$552,717,955	62.42
Rent of mills, factories, and shops,	7,970,695	0.90
Taxes, not including internal revenue,	6,070,464	0.69
Interest, rent of offices, etc.,	47,010,908	5.31
Paid for contract work out of factories,	12,156,948	1.37
Paid to wage earners employed in works,	228,240,442	25.78
Paid for salaries of officers, clerks, etc.,	31,257,630	3.53
Total expenses,	$885,425,042	100.00

The expense account of the individuals, firms, and corporations carrying on manufacturing and mechanical industries in the 29,180 establishments amounted, in the aggregate, to $885,425,042, and the selling value of the goods made together with the amount received for work done was $1,035,198,989, the balance for profit and loss being $149,773,947, or, by distribution, an average amount of $5,132.76 per establishment. Sixty-two per cent of the total expenses was paid for materials and nearly 26 per cent for wages; in other words, out of every $100 paid for expenses during the year 1900, $62.42 was paid for materials, $25.78 for wages, $3.53 for salaries, $1.37 for work done outside of the factory by persons indirectly employed, $5.31 for interest charges, rent of offices, office expenses, etc., 90 cents for rent of factories, mills, or shops, and 69 cents for taxes (not including internal revenue taxes).

In the next table, we show the percentages of expenses in relation to product for the 29,180 establishments in 1900.

Classification.	Amounts	Percentages
Value of stock used, including freight, fuel, and supplies,	$552,717,955	53.39
Rent of mills, factories, and shops,	7,970,695	0.77
Taxes, not including internal revenue,	6,070,464	0.59
Interest, rent of offices, etc.,	47,010,908	4.54
Paid for contract work out of factories,	12,156,948	1.17
Paid to wage earners employed in works,	228,240,442	22.05
Paid for salaries of officers, clerks, etc.,	31,257,630	3.02
Balance for profit and loss,	149,773,947	14.47
Value of goods made and work done,	$1,035,198,989	100.00

Out of every $100 received for goods made or work done in 1900, the manufacturers paid over one-half, or $53.39 for stock and materials, $5.90 for rent, taxes, and interest, $1.17 for contract work, $25.07 for labor and salaries in producing the product, while the balance, $14.47, remained for profit and loss.

Manufactures: By Industries.

The following table exhibits the number of establishments in 1895 and 1900, respectively, classified by industries:

Industries.	Number of Establishments		Industries.	Number of Establishments	
	1895	1900		1895	1900
Agricultural implements,	16	11	Electrical apparatus and appliances,	101	194
Arms and ammunition,	25	13	Electroplating,	43	54
Artisans' tools,	155	89	Emery and sand paper and cloth, etc.,	17	16
Awnings, sails, tents, etc.,	68	78	Fancy articles, etc.,	52	68
Boots and shoes,	2,074	2,774	Fertilizers,	8	9
Boxes (paper and wooden),	219	195	Fine arts and taxidermy,	12	15
Brick, tiles, and sewer pipe,	104	81	Fireworks and matches,	5	4
Brooms, brushes, and mops,	61	65	Flax, hemp, jute, and linen goods,	10	15
Building,	5,242	6,052	Food preparations,	1,862	1,920
Burial cases, caskets, coffins, etc.,	16	15	Furniture,	548	743
Buttons and dress trimmings,	27	13	Gas and residual products,	62	69
Carpetings,	14	14	Glass,	29	31
Carriages and wagons,	1,043	1,009	Glue, isinglass, and starch,	26	19
Cement, kaolin, lime, and plaster,	18	23	Hair work (animal and human),	36	31
Charcoal and kindlers,	9	4	Hose: rubber, linen, etc.,	6	7
Chemical preparations (compounded),	33	19	Hosiery and knit goods,	77	63
Clocks, watches, and jewelry,	814	848	Ink, mucilage, and paste,	15	31
Clothing,	3,391	4,227	Ivory, bone, shell, and horn goods, etc.,	31	35
Concrete walks, paving, etc.,	32	66	Leather,	200	177
Cooking, lighting, and heating apparatus,	79	50	Liquors and beverages (not spirituous),	118	287
Cordage and twine,	46	27	Liquors: malt, distilled, and fermented,	210	54
Corks, bungs, and taps,	4	5	Lumber,	391	696
Cotton goods,	188	185	Machines and machinery,	660	901
Cotton, woollen, and other textiles,	4	–	Metals and metallic goods,	2,309	3,053
Crayons, pencils, crucibles, etc.,	7	3	Mixed textiles,	16	7
Drugs and medicines,	1,281	165	Models, lasts, and patterns,	89	98
Dyestuffs,	14	18	Musical instruments and materials,	103	96
Earthen, plaster, and stone ware,	16	29			

Industries.	Number of Establishments		Industries.	Number of Establishments	
	1895	1900		1895	1900
Oils and illuminating fluids,	17	24	Shipbuilding,	155	125
Paints, colors, and crude chemicals,	30	30	Silk and silk goods,	17	20
Paper and paper goods,	160	156	Sporting and athletic goods,	13	13
Perfumes, toilet articles, etc.,	26	13	Stone,	414	473
Photographs and photographic materials,	353	418	Straw and palm leaf goods,	28	50
Polishes and dressing,	79	78	Tallow, candles, soap, and grease,	139	102
Printing, publishing, and bookbinding,	872	1,180	Tobacco, snuff, and cigars,	322	332
Print works, dye works, and bleacheries,	106	126	Toys and games (children's),	20	23
Railroad construction and equipment,	29	27	Trunks and valises,	21	15
Rubber and elastic goods,	76	76	Whips, lashes, and stocks,	46	31
Saddlery and harness,	449	433	Wooden goods,	560	369
Scientific instruments and appliances,	100	83	Woollen goods,	166	167
			Worsted goods,	31	45
			Establishments each producing less than $500 annually,*	-	2,773
			All Industries,	26,265	31,953

* See second paragraph on page 127.

In the United States report, 86 establishments were classified under the head of "All other industries," this being done by the Federal authorities to avoid disclosing private business. In the above table, however, we find it possible to distribute them according to the classification obtaining in these Annual Reports.

In the next table, we reproduce from the Census Bulletin the amount of capital invested in 1900.

Owing to differences in the methods of classification, it is not feasible to make comparison of the capital invested in 1895 and 1900. We have frequently had occasion to point out that the attempt to compare the amount of capital returned at different Census periods leads to imperfect results. The term "capital invested" is susceptible of various meanings. The manufacturer generally uses it as synonymous with "assets," and in this view is supported by the commercial agencies, while in economic discussion the word capital has other and varied significance. From different points of view these different meanings may each be justified. In the returns made to this Department, we have endeavored to secure a figure which will represent the "amount devoted

to production" at the date of making the return, without regard to the assets or the financial standing of the establishment. The figures presented in the Annual Statistics of Manufactures being made upon the same basis in each year are, of course, comparable. In the United States Census Bulletins, however, finished product on hand, bills receivable, and unsettled ledger accounts are included under the head of capital. Undoubtedly these should be included if it is desired to know the *assets* of the establishments, but as none of them represent items that may be devoted to current production until realized upon, they are not included in the annual returns made in Massachusetts. When realized upon by credit, or otherwise, the proceeds take their proper place as "cash on hand or in bank," or, if so invested, appear as "land," "buildings," "machinery," "stock on hand," etc.

The statistics from the Census of 1900 follow:

Amount of Capital Invested — 1900.

Industries.	Land	Buildings	Machinery, Tools, and Implements	Cash and Sundries	Totals
Agricultural implements,	$16,700	$37,300	$122,733	$529,739	$706,472
Arms and ammunition,	200,900	379,714	631,303	720,685	1,932,602
Artisans' tools,	110,747	684,145	1,203,046	1,956,041	3,953,979
Awnings, sails, tents, etc.,	3,300	7,600	27,802	288,989	327,691
Boots and shoes,	919,119	2,839,309	6,826,000	35,528,350	46,112,778
Boxes (paper and wooden),	554,675	861,669	1,222,184	2,302,701	4,941,229
Brick, tiles, and sewer pipe,	669,263	381,134	431,218	837,049	2,318,664
Brooms, brushes, and mops,	15,885	36,600	128,294	1,313,703	1,494,482
Building,	1,847,831	2,191,304	3,065,097	13,748,753	20,852,985
Burial cases, caskets, coffins, etc.,	22,000	71,000	134,175	489,010	716,185
Buttons and dress trimmings,	33,800	105,300	122,669	364,670	626,439
Carpetings,	614,572	1,503,894	2,012,940	5,271,983	9,403,389
Carriages and wagons,	698,020	1,451,190	1,924,496	6,172,614	10,246,320
Cement, kaolin, lime, and plaster,	136,203	224,360	94,516	448,395	903,474
Charcoal and kindlers,	125	1,500	2,200	2,075	5,900
Chemical preparations (compounded),	65,969	343,314	367,912	1,100,176	1,877,371
Clocks, watches, and jewelry,	138,192	437,745	1,726,878	3,929,062	6,231,877
Clothing,	349,693	1,159,133	1,865,646	13,302,120	16,676,592
Concrete walks, paving, etc.,	119,300	74,850	171,438	411,634	777,222
Cooking, lighting, and heating apparatus,	113,831	310,522	633,420	1,630,042	2,687,815
Cordage and twine,	434,598	930,946	1,461,668	5,660,874	8,488,086
Corks, bungs, and taps,	–	–	18,621	56,953	75,574
Cotton goods,	8,841,140	30,275,647	58,305,153	60,131,925	157,553,865

Amount of Capital Invested — 1900 — Continued.

Industries.	Land	Buildings	Machinery, Tools, and Implements	Cash and Sundries	Totals
Drugs and medicines,	$185,736	$329,022	$332,449	$2,434,556	$3,281 763
Dyestuffs,	97,400	81,000	66,313	552,906	797,619
Earthen, plaster, and stone ware,	370,880	522,942	197,273	536,480	1,627,575
Electrical apparatus and appliances,	116,350	718,948	1,349,584	6,762,261	8,947,143
Electroplating,	3,600	5,700	75,050	57,146	141,496
Emery and sand paper and cloth, etc.,	53,853	116,005	179,181	650,665	999,704
Fancy articles, etc.,	5,375	9,400	89,901	405,403	510,079
Fertilizers,	150,179	227,967	396,601	2,475,283	3,250,030
Fine arts and taxidermy,	3,700	7,823	4,729	42,150	58,402
Flax, hemp, jute, and linen goods,	83,074	433,065	530,078	1,580,039	2,626,256
Food preparations,	4,071,390	5,874,805	8,397,606	24,211,125	42,554,926
Furniture,	584,044	1,703,750	1,601,435	10,715,037	14,604,266
Gas and residual products,	3,591,388	6,621,853	16,941,434	2,877,903	30,032,578
Glass,	34,013	53,147	60,874	254,156	402,190
Glue, isinglass, and starch,	152,210	241,210	204,309	751,371	1,349,100
Hair work (animal and human),	–	–	8,375	43,195	51,570
Hose: rubber, linen, etc.,	100,800	171,500	365,577	1,085,389	1,723,266
Hosiery and knit goods,	369,267	712,747	1,274,317	3,949,284	6,305,615
Ink, mucilage, and paste,	41,025	55,300	74,597	455,487	626,409
Ivory, bone, shell, and horn goods, etc.,	22,300	73,514	159,046	475,317	730,177
Leather,	371,742	1,374,698	1,918,966	12,632,982	16,298,388
Liquors and beverages (not spirituous),	114,850	176,764	370,960	529,969	1,192,543
Liquors: malt, distilled, and fermented,	2,277,911	6,583,623	4,824,961	6,793,825	20,480,320
Lumber,	2,175,186	1,332,121	1,837,475	5,028,426	10,373,208
Machines and machinery,	4,045,791	8,560,020	14,600,131	40,847,767	68,053,709
Metals and metallic goods,	2,452,998	5,118,922	11,231,759	23,411,839	42,215,518
Mixed textiles,	134,400	229,930	324,212	650,098	1,338,640
Models, lasts, and patterns,	57,001	129,425	233,309	421,985	841,720
Musical instruments and materials,	626,711	968,325	692,996	5,055,593	7,343,625
Oils and illuminating fluids,	62,342	78,842	93,769	369,059	604,012
Paints, colors, and crude chemicals,	80,476	207,241	202,269	810,722	1,300,708
Paper and paper goods,	3,339,762	6,662,674	8,791,489	13,235,225	32,529,150
Perfumes, toilet articles, etc.,	250	5,500	8,705	129,869	144,324
Photographs and photographic materials,	42,261	134,124	518,354	514,539	1,209,278
Polishes and dressing,	50,170	184,269	186,395	1,411,003	1,831,837
Printing, publishing, and bookbinding,	1,249,756	1,401,722	9,095,706	12,396,371	24,143,555
Print works, dye works, and bleacheries,	1,213,293	2,028,872	2,563,413	9,698,381	15,503,959

Amount of Capital Invested — 1900 — Concluded.

INDUSTRIES.	Land	Buildings	Machinery, Tools, and Implements	Cash and Sundries	TOTALS
Railroad construction and equipment,	$1,168,691	$1,345,802	$427,150	$1,176,148	$4,117,791
Rubber and elastic goods,	907,471	2,221,515	3,006,000	18,840,985	24,975,971
Saddlery and harness,	52,500	91,921	201,668	921,442	1,267,531
Scientific instruments and appliances,	52,081	174,316	263,033	1,218,536	1,707,966
Shipbuilding,	344,039	297,266	647,002	860,984	2,149,291
Silk and silk goods,	216,341	756,454	707,345	3,969,618	5,649,758
Sporting and athletic goods,	16,500	39,000	28,204	106,015	189,719
Stone,	2,033,565	772,465	1,548,725	2,865,946	7,220,701
Straw and palm leaf goods,	150,938	240,666	315,383	1,091,084	1,798,071
Tallow, candles, soap, and grease,	526,560	1,097,108	563,327	1,434,643	3,621,638
Tobacco, snuff, and cigars,	122,970	118,950	91,971	2,024,610	2,358,501
Toys and games (children's),	20,850	68,700	95,685	321,802	507,037
Trunks and valises,	1,100	8,900	14,450	119,864	144,314
Whips, lashes, and stocks,	18,100	55,900	124,516	909,833	1,108,349
Wooden goods,	371,871	547,921	576,884	1,316,460	2,813,136
Woollen goods,	2,458,008	4,927,326	6,088,816	20,846,201	34,320,351
Worsted goods,	2,988,592	4,539,224	8,585,662	29,676,822	45,790,300
Other industries,	1,096,823	1,661,947	6,344,425	9,485,018	18,588,213
Establishments each producing less than $500 annually,*	–	–	–	–	2,895,993
ALL INDUSTRIES,	$57,284,347	$116,410,327	$201,933,253	$447,636,360	$826,160,280

* See second paragraph on page 127.

Although the aggregate returns as to capital for the years 1895 and 1900 cannot be compared, the separate items "land," "buildings," and "machinery, tools, and implements" are comparable, as follows, the table being restricted to all industries and to the nine leading industries, and, in 1900, to the 29,180 establishments:

INDUSTRIES.	1895			1900		
	Land	Buildings and Fixtures	Machinery, Tools, and Implements	Land	Buildings and Fixtures	Machinery, Tools, and Implements
Boots and shoes,	$868,654	$3,231,235	$6,997,353	$919,119	$2,839,309	$6,826,000
Carpetings,	502,250	1,303,963	2,123,592	614,572	1,503,894	2,012,940
Cotton goods,	7,409,299	29,275,144	54,659,232	8,841,140	30,275,647	58,305,153
Leather,	448,654	1,329,112	1,604,669	371,742	1,374,698	1,918,966
Machines and machinery,	2,405,670	5,921,338	12,982,770	4,045,791	8,560,020	14,600,131
Metals and metallic goods,	2,609,417	5,046,030	9,636,176	2,452,998	5,118,922	11,231,759

Industries.	1895			1900		
	Land	Buildings and Fixtures	Machinery, Tools, and Implements	Land	Buildings and Fixtures	Machinery, Tools, and Implements
Paper and paper goods,	$2,629,751	$8,022,796	$9,378,982	$3,839,762	$6,662,674	$8,791,489
Woollen goods, . .	1,653,649	5,639,145	7,102,312	2,458,008	4,927,326	6,088,816
Worsted goods, . .	892,251	2,422,550	5,434,221	2,988,592	4,539,224	8,585,662
Nine industries, . .	19,419,595	62,191,313	109,919,307	26,531,724	65,801,714	118,360,916
Other industries, .	21,414,441	45,076,239	68,816,147	30,752,623	50,608,613	83,572,337
All industries, . .	40,834,036	107,267,552	178,735,454	57,284,347	116,410,327	201,933,253

In the nine leading industries in the aggregate, the amount invested in land shows an increase of 36.62 per cent in 1900 as compared with 1895; the amount invested in buildings and fixtures increased 5.81 per cent, and the value of machinery, implements, and tools increased 7.68 per cent. The increases shown for All Industries were: Land, 40.29 per cent; buildings and fixtures, 8.52 per cent; and machinery, implements, and tools, 12.98 per cent.

The table which follows shows the total value of stock and materials used,* classified by industries. It may be added, however, that the figures for "stock used" in 1900 include amounts paid for rent of power and heat, if any, and the amount paid for freight. These items were omitted in the returns for 1895.

Stock and Materials Used.

Industries.	Value of Stock and Materials Used	
	1895	1900
Agricultural implements, ...	$494,266	$216,313
Arms and ammunition, ...	502,345	509,555
Artisans' tools, ...	924,596	1,155,081
Awnings, sails, tents, etc., ...	274,119	344,194
Boots and shoes, ...	75,262,178	94,681,528
Boxes (paper and wooden), ...	3,144,776	3,961,061
Brick, tiles, and sewer pipe, ...	553,731	400,365
Brooms, brushes, and mops, ...	838,169	1,089,053
Building, ...	28,427,531	32,919,603
Burial cases, caskets, coffins, etc., ...	227,289	295,892
Buttons and dress trimmings, ...	470,779	237,835

* All materials consumed in the production of goods made, *i.e.*, raw material, material purchased in a partly manufactured state, and also coal, gas, oil, dyestuffs, findings, and supplies of every kind required for the industrial process.

Stock and Materials Used — Continued.

Industries.	Value of Stock and Materials Used	
	1895	1900
Carpetings,	$4,490,399	$3,990,675
Carriages and wagons,	4,420,184	5,253,685
Cement, kaolin, lime, and plaster,	293,243	369,269
Charcoal and kindlers,	6,038	5,012
Chemical preparations (compounded),	798,595	1,080,826
Clocks, watches, and jewelry,	3,269,276	4,723,815
Clothing,	19,402,729	21,055,597
Concrete walks, paving, etc.,	92,701	433,682
Cooking, lighting, and heating apparatus,	1,072,084	1,535,270
Cordage and twine,	3,659,236	7,027,586
Corks, bungs, and taps,	33,099	51,101
Cotton goods,	48,432,498	56,998,179
Cotton, woollen, and other textiles,	1,199,612	–
Crayons, pencils, crucibles, etc.,	40,023	–
Drugs and medicines,	2,703,469	2,094,435
Dyestuffs,	660,520	1,168,564
Earthen, plaster, and stone ware,	74,120	188,278
Electrical apparatus and appliances,	3,027,798	5,943,951
Electroplating,	56,891	73,662
Emery and sand paper and cloth, etc.,	355,920	441,468
Fancy articles, etc.,	337,716	577,559
Fertilizers,	1,401,157	1,115,818
Fine arts and taxidermy,	4,335	19,192
Fireworks and matches,	63,590	–
Flax, hemp, jute, and linen goods,	2,028,837	1,203,659
Food preparations,	63,813,424	75,430,273
Furniture,	8,031,717	8,046,937
Gas and residual products,	1,599,205	1,651,873
Glass,	141,714	200,121
Glue, isinglass, and starch,	687,679	898,642
Hair work (animal and human),	390,548	37,564
Hose: rubber, linen, etc.,	796,868	764,827
Hosiery and knit goods,	3,242,058	2,916,612
Ink, mucilage, and paste,	237,027	885,689
Ivory, bone, shell, and horn goods, etc.,	568,850	945,413
Leather,	17,947,298	21,000,002
Liquors and beverages (not spirituous),	383,693	453,145
Liquors: malt, distilled, and fermented,	5,192,492	5,879,876
Lumber,	2,319,375	7,210,172
Machines and machinery,	12,896,878	22,604,855
Metals and metallic goods,	17,213,647	24,222,601
Mixed textiles,	1,231,228	953,203
Models, lasts, and patterns,	331,497	292,415
Musical instruments and materials,	2,477,488	2,476,904
Oils and illuminating fluids,	804,668	1,279,104
Paints, colors, and crude chemicals,	905,511	1,332,899
Paper and paper goods,	17,108,505	16,042,769
Perfumes, toilet articles, etc.,	230,274	167,392
Photographs and photographic materials,	613,247	730,553

Stock and Materials Used — Concluded.

Industries.	Value of Stock and Materials Used	
	1895	1900
Polishes and dressing,	$965,530	$1,104,797
Printing, publishing, and bookbinding,	6,108,763	9,025,068
Print works, dye works, and bleacheries,	16,337,170	3,180,341
Railroad construction and equipment,	2,453,007	2,216,679
Rubber and elastic goods,	15,588,553	17,392,110
Saddlery and harness,	1,110,243	904,070
Scientific instruments and appliances,	1,023,751	1,163,623
Shipbuilding,	634,210	1,357,405
Silk and silk goods,	2,575,769	3,823,963
Sporting and athletic goods,	246,629	232,459
Stone,	1,727,208	2,351,226
Straw and palm leaf goods,	3,310,836	2,290,217
Tallow, candles, soap, and grease,	2,877,909	2,752,180
Tobacco, snuff, and cigars,	2,104,769	1,910,617
Toys and games (children's),	338,214	319,258
Trunks and valises,	101,051	160,599
Whips, lashes, and stocks,	471,481	719,423
Wooden goods,	4,530,141	1,838,101
Woollen goods,	17,132,502	19,036,918
Worsted goods,	13,407,877	25,315,707
Other industries,	–	8,037,590
Establishments each producing less than $500 annually,*	–	201,891
All Industries,	$461,254,353	$552,919,846

* See second paragraph on page 127.

The table which follows shows the total amount paid in wages and the total amount paid in salaries, for 1895 and 1900, classified by industries.

Wages and Salaries.

Industries.	Total Amount Paid in Wages		Total Amount Paid in Salaries	
	1895	1900	1895	1900
Agricultural implements,	$299,282	$159,700	$76,270	$45,358
Arms and ammunition,	820,955	862,565	63,497	80,595
Artisans' tools,	1,140,337	1,043,124	174,739	174,927
Awnings, sails, tents, etc.,	149,920	192,212	8,995	28,782
Boots and shoes,	28,276,255	30,635,920	2,315,272	2,818,614
Boxes (paper and wooden),	1,778,517	2,338,929	142,255	214,017
Brick, tiles, and sewer pipe,	803,350	622,311	98,387	44,205
Brooms, brushes, and mops,	289,753	425,789	52,599	91,023
Building,	17,050,540	21,342,482	351,681	861,003

Wages and Salaries — Continued.

Industries.	Total Amount Paid in Wages		Total Amount Paid in Salaries	
	1895	1900	1895	1900
Burial cases, caskets, coffins, etc.,	$146,122	$160,213	$19,480	$64,350
Buttons and dress trimmings,	343,149	276,202	87,327	31,164
Carpetings,	1,749,670	1,722,703	171,831	127,264
Carriages and wagons,	3,743,639	3,214,522	211,177	312,292
Cement, kaolin, lime, and plaster,	77,757	193,409	9,651	39,540
Charcoal and kindlers,	2,281	2,295	–	–
Chemical preparations (compounded),	230,983	338,716	83,947	133,091
Clocks, watches, and jewelry,	3,180,056	3,246,707	561,136	409,210
Clothing,	6,822,549	10,446,315	1,047,697	1,278,930
Concrete walks, paving, etc.,	82,384	485,820	2,700	61,008
Cooking, lighting, and heating apparatus,	1,355,304	1,155,824	217,065	257,737
Cordage and twine,	872,766	1,249,909	136,972	173,384
Corks, bungs, and taps,	9,579	22,495	–	12,669
Cotton goods,	27,447,232	32,648,978	1,817,726	2,091,392
Cotton, woollen, and other textiles,	650,133	–	39,522	–
Crayons, pencils, crucibles, etc.,	15,107	–	6,580	–
Drugs and medicines,	476,953	464,458	281,402	369,593
Dyestuffs,	87,078	51,614	42,045	50,394
Earthen, plaster, and stone ware,	104,269	262,141	15,727	60,360
Electrical apparatus and appliances,	1,740,222	3,114,037	316,235	627,196
Electroplating,	111,307	113,779	7,552	1,315
Emery and sand paper and cloth, etc.,	173,153	214,191	61,977	75,590
Fancy articles, etc.,	160,403	206,752	59,012	46,649
Fertilizers,	163,797	115,083	24,589	186,685
Fine arts and taxidermy,	9,871	10,043	1,600	2,774
Fireworks and matches,	33,613	–	15,804	–
Flax, hemp, jute, and linen goods,	662,947	485,186	94,707	68,692
Food preparations,	6,458,105	6,714,383	1,147,781	2,114,178
Furniture,	3,598,771	4,367,520	433,852	591,180
Gas and residual products,	699,342	813,459	389,306	420,085
Glass,	208,365	302,612	39,253	42,466
Glue, isinglass, and starch,	173,418	160,305	31,465	63,868
Hairwork (animal and human),	73,695	26,610	5,250	1,400
Hose: rubber, linen, etc.,	253,018	199,493	61,960	80,923
Hosiery and knit goods,	1,711,511	2,096,853	140,727	213,065
Ink, mucilage, and paste,	49,328	83,382	34,300	88,832
Ivory, bone, shell, and horn goods, etc.,	393,244	559,785	58,438	42,729
Leather,	3,914,352	3,686,293	373,117	505,450
Liquors and beverages (not spirituous),	209,337	232,056	15,100	75,039
Liquors: malt, distilled, and fermented,	1,387,456	1,770,005	553,578	772,946
Lumber,	831,506	2,559,154	92,122	310,763
Machines and machinery,	11,624,673	19,003,103	1,973,624	3,052,583
Metals and metallic goods,	11,405,493	12,645,812	1,595,357	1,580,532
Mixed textiles,	294,828	180,795	64,625	41,397
Models, lasts, and patterns,	389,066	437,362	40,274	42,306

Wages and Salaries — Concluded.

Industries.	Total Amount Paid in Wages		Total Amount Paid in Salaries	
	1895	1900	1895	1900
Musical instruments and materials,	$2,014,810	$2,037,153	$437,146	$329,533
Oils and illuminating fluids,	68,949	84,235	19,085	38,168
Paints, colors, and crude chemicals,	147,026	176,101	65,378	102,784
Paper and paper goods,	5,150,118	5,058,297	1,279,710	1,257,737
Perfumes, toilet articles, etc.,	18,787	26,656	10,492	13,949
Photographs and photographic materials,	417,272	464,245	25,010	82,493
Polishes and dressing,	178,382	163,378	104,372	203,482
Printing, publishing, and bookbinding,	6,634,086	8,789,414	2,233,597	3,253,997
Print works, dye works, and bleacheries,	3,131,436	2,291,736	547,339	561,922
Railroad construction and equipment,	1,821,117	2,132,817	157,349	123,988
Rubber and elastic goods,	4,555,991	4,858,259	750,534	732,710
Saddlery and harness,	486,362	442,986	26,431	41,233
Scientific instruments and appliances,	660,471	778,064	67,063	114,378
Shipbuilding,	561,082	1,035,993	47,812	79,046
Silk and silk goods,	812,785	1,110,324	269,836	227,276
Sporting and athletic goods,	242,107	133,161	29,234	21,404
Stone,	3,163,208	3,168,662	200,168	256,592
Straw and palm leaf goods,	1,479,791	1,038,768	176,523	108,911
Tallow, candles, soap, and grease,	435,088	453,898	159,088	202,389
Tobacco, snuff, and cigars,	1,418,743	1,749,676	127,302	153,576
Toys and games (children's),	225,812	155,560	49,484	29,897
Trunks and valises,	55,448	64,912	7,883	13,297
Whips, lashes, and stocks,	208,520	291,890	78,713	151,874
Wooden goods,	2,671,462	1,133,811	216,713	110,220
Woollen goods,	7,129,016	7,096,712	686,846	808,236
Worsted goods,	4,545,449	7,055,585	372,149	796,250
Other industries,	–	2,784,743	–	562,743
Establishments each producing less than $500 annually,*	–	49,321	–	–
All Industries,	$192,970,059	$228,289,763	$23,812,542	$31,257,630

* See second paragraph on page 127.

The returns as to the value of goods made and work done are fairly comparable since they are collected in the State and Federal Censuses on practically the same basis, although the methods of classification employed in tabulation differ. We have reclassified the product values as returned by the United States Census under the industry headings of the classification adopted by this Department, and in the following table show the value of goods made and work done for the nine leading industries for 1895 and 1900, the figures for the latter year including returns from the 29,180 establishments.

Industries.	Value of Goods Made and Work Done		Increase (+) or Decrease (−) in 1900	
	1895	1900	Amounts	Percentages
Boots and shoes,	$122,135,081	$143,289,259	+$21,154,178	+17.32
Carpetings,	7,447,115	7,391,576	−55,539	−0.75
Cotton goods,	93,615,560	114,112,363	+20,496,803	+21.89
Leather,	25,694,407	28,666,895	+2,972,488	+11.57
Machines and machinery,	33,492,848	60,362,154	+26,869,306	+80.22
Metals and metallic goods,	40,297,899	50,334,171	+10,036,272	+24.91
Paper and paper goods,	27,955,024	29,794,256	+1,839,232	+6.58
Woollen goods,	29,370,963	32,221,920	+2,850,957	+9.71
Worsted goods,	20,975,996	40,557,363	+19,581,367	+93.35
Nine industries,	400,984,893	506,729,957	+105,745,064	+26.37
Other industries,	448,822,409	528,469,032	+79,646,623	+17.75
All industries,	849,807,302	1,035,198,989	+185,391,687	+21.82

The only leading industry exhibiting a decrease is Carpetings, and in this case the loss is small, being but 75/100ths of one per cent. Each of the other nine leading industries shows increase in 1900 over 1895, ranging from 6.58 per cent in Paper and Paper Goods to 93.35 per cent in Worsted Goods. In the aggregate, the nine leading industries show an increase of 26.37 per cent, or 4.55 per cent greater than the increase shown for All Industries.

It will be noted that the value of goods made and work done in 1900 is given as $1,035,198,989. On page 137 of the Annual Statistics of Manufactures for 1900, the estimated value of goods made and work done, based upon the returns made by representative establishments in that year, was $1,085,717,656, a variation from the above figure of $50,518,667, or about five per cent. This variation may be explained in part by the fact that the United States Census Office gathered figures for the year ending June 30, 1900, while the Annual Statistics covered the year ending December 31, 1900.

The presentation of industries in the Census Bulletin was given in more detail than that shown under the system of industrial classification adopted by this office. We have, however, selected certain lines which are comparable with those shown in 1895 and present them in the following table, together with increases and decreases expressed in amounts and percentages:

Manufactures: By Name.

Classification.	Value of Goods Made and Work Done		Increase (+) or Decrease (−) in 1900	
	1895	1900	Amounts	Percentages
Bicycles and tricycles,	$4,314,896	$2,715,310	−$1,599,586	−37.07
Blacking and stains (shoe and leather),	949,133	1,573,025	+623,892	+65.73
Blacksmithing and wheelwrighting,	3,063,040	5,297,844	+2,234,804	+72.96
Bolts, nuts, washers, and rivets,	810,770	1,834,885	+1,024,115	+126.31
Boot and shoe cut stock,	14,006,926	18,238,922	+4,231,996	+30.21
Boot and shoe findings,	2,378,800	5,794,240	+3,415,440	+143.58
Boots and shoes (factory product),	104,138,867	117,115,243	+12,976,376	+12.46
Boots and shoes (rubber),	14,229,024	16,490,015	+2,260,991	+15.89
Bottling liquors,	2,014,296	4,384,037	+2,369,741	+117.65
Boxes (paper),	2,480,066	4,145,292	+1,665,226	+67.14
Boxes (wooden),	3,394,018	3,723,518	+329,500	+9.71
Bread and other bakery products,	11,673,106	15,420,529	+3,747,423	+32.10
Bridges and wharves,	424,782	359,602	−65,180	−15.34
Cabinet work and upholstery,	1,854,270	2,745,149	+890,879	+48.04
Carpenter work,	10,578,258	32,741,606	+22,163,348	+209.52
Carpeting (textile),	6,631,659	6,966,237	+334,578	+5.05
Carriages and wagons,	3,249,669	6,118,121	+2,868,452	+88.27
Carriages and wagons (children's),	385,446	572,561	+187,115	+48.55
Clothing (men's, boys', and youths', factory product),	13,426,257	9,838,998	−3,587,259	−26.72
Clothing (men's custom made and repairing),	5,899,394	9,860,673	+3,961,279	+67.15
Clothing (women's, factory product),	1,999,761	5,201,650	+3,201,889	+160.11
Cigars and cigarettes (tobacco),	4,446,923	5,298,390	+851,467	+19.15
Combs (ivory, bone, horn, etc.),	484,835	1,099,467	+614,632	+126.77
Confectionery,	4,689,760	7,014,532	+2,324,772	+49.57
Cordage and twine,	4,286,574	9,635,571	+5,348,997	+124.78
Corsets and waists,	1,136,506	1,541,366	+404,860	+35.62
Cotton waste,	2,504,222	2,987,188	+482,966	+19.29
Cutlery and edge tools,	1,185,087	2,608,075	+1,422,988	+124.78
Dressmaking,	1,916,970	4,767,972	+2,851,002	+148.72
Electrical apparatus and appliances,	5,625,882	10,490,361	+4,864,479	+86.47
Electrical construction work,	648,022	1,521,896	+873,874	+134.85
Emery and sand paper and cloth,	199,448	375,556	+176,108	+88.30
Emery wheels,	341,902	672,740	+330,838	+96.76
Envelopes,	1,703,344	2,132,353	+429,009	+25.19
Files,	73,919	86,563	+12,644	+17.11
Firearms,	1,300,128	1,928,179	+628,051	+48.31
Flavoring extracts,	363,562	1,022,236	+658,674	+181.17
Forgings (iron and steel),	410,422	467,095	+56,673	+13.81
Gas,	4,496,928	5,356,301	+859,373	+19.11
Gas (residual products of),	369,585	381,108	+11,523	+3.12
Glue,	559,114	913,489	+354,375	+63.38
Gold and silver leaf and foil,	141,807	166,250	+24,443	+17.24
Grease and tallow,	1,171,946	1,879,908	+707,962	+60.41
Iron work (architectural),	1,211,715	2,545,779	+1,334,064	+110.10

Manufactures: By Name — Concluded.

Classification.	Value of Goods Made and Work Done		Increase (+) or Decrease (−) in 1900	
	1895	1900	Amounts	Percentages
Japanning,	$16,650	$48,319	+$31,669	+190.20
Jewelry,	6,193,918	10,315,334	+4,121,416	+66.54
Lasts,	601,639	853,812	+252,173	+41.91
Lithographs and lithographic work,	1,084,338	1,789,161	+704,823	+65.00
Liquors (distilled),*	2,245,927	2,081,697	−164,230	−7.31
Liquors (malt),	8,661,524	11,255,613	+2,594,089	+29.95
Locksmithing, etc.,	95,493	269,753	+174,260	+182.48
Lumber and saw mill products,	4,133,000	6,526,230	+2,393,230	+57.91
Masonry (brick and stone),	7,224,804	16,628,973	+9,404,169	+130.17
Mattresses and spring beds,	1,048,302	1,617,503	+569,201	+54.30
Millinery (custom),	2,763,373	5,075,501	+2,312,128	+83.67
Mucilage and paste,	96,460	984,782	+888,322	+920.92
Music (sheet) and music books,	315,115	407,634	+92,519	+29.36
Needles,	164,963	223,851	+58,888	+35.70
Optical goods,	1,580,199	2,082,837	+502,638	+31.81
Organs and materials,	688,957	1,189,585	+500,628	+72.66
Painting (house and sign),	4,146,031	8,499,066	+4,353,035	+104.99
Paper (book),	5,345,661	5,501,788	+156,127	+2.92
Paper (fine),	10,096,879	11,298,628	+1,201,749	+11.90
Paper (news),	1,256,939	840,705	−416,234	−33.11
Paper (wrapping),	2,907,318	1,441,291	−1,466,027	−50.43
Paper boards,	818,061	954,111	+136,050	+16.63
Photographs,	1,183,532	1,740,878	+557,346	+47.09
Pianos and materials,	5,297,907	4,981,966	−315,941	−5.96
Plumbers' supplies,	1,260,813	719,154	−541,659	−42.96
Plumbing and steam and gas fitting,	11,244,243	13,507,245	+2,263,002	+20.13
Roofing,	1,499,650	2,090,450	+590,800	+39.40
Shirts,	1,883,941	2,362,860	+478,919	+25.42
Silver and plated ware,	2,814,757	2,769,191	−45,566	−1.62
Stamps, stencils, etc.,	199,558	187,396	−12,162	−6.09
Starch,	319,019	390,161	+71,142	+22.30
Sugar and molasses (refining),	16,663,875	19,626,882	+2,963,007	+17.78
Surgical appliances,	101,985	198,566	+96,581	+94.70
Varnishes and japans,	421,124	500,672	+79,548	+18.89
Woodenware,	152,578	219,496	+66,918	+43.86

* Internal revenue tax included. See page 163, *post*.

The majority of the lines in the preceding table show substantial increases, indicating that in the leading articles of manufacture the Commonwealth is making fair progression. Several lines exhibit decreases. For example, Bicycles and Tricycles shows a decrease of 37.07 per cent. This may be explained on the ground of a decreased demand for "wheels,"

borne out by the loss of over 60 per cent in the membership of the League of American Wheelmen and the absorption of local factories in the American Bicycle Co., with the consequent closing of some of the plants.

The decrease in Men's, Boys', and Youths' Clothing (factory product) is accounted for from the fact that clothing must, under Massachusetts laws, be made under cleanly conditions, and the abolishment of the sweat-shop has driven the manufacture of clothing into New York and other States. The manufacture of news and wrapping paper has changed in recent years and Maine and New Hampshire now produce from wood pulp what Massachusetts in past years produced from paper and rope stock. This, doubtless, accounts in a measure for the decline shown in the value of these articles. Since 1895, two piano manufacturing plants have removed to the West as has also the manufacture of plumbers' supplies.

In this connection, we reproduce a table from the Census Bulletin which shows the number of establishments not in operation in 1900, together with the amount of capital invested in the idle plants; and upon the basis of capital in those establishments which were in operation, we estimate the possible value of goods made and work done for the year.

Idle Establishments — 1900.

Kinds of Goods Made and Work Done.	Number of Idle Establishments	Amount of Capital Invested	Estimated Value of Goods Made and Work Done
Ammunition,	1	$249,500	$188,622
Bookbinding and blank book making,	3	14,850	20,359
Boots and shoes (factory product),	11	152,460	475,065
Brick and tiles,	6	70,100	43,602
Bridges,	1	75,000	126,750
Carpentering,	13	19,795	79,299
Carriages and wagons,	3	19,836	21,681
Electrical apparatus and supplies,	3	327,500	415,925
Flouring and grist mill products,	4	21,825	65,126
Foundry and machine shop products,	6	47,100	42,390
Horseshoes (factory product),	2	993,747	335,000
Hosiery and knit goods,	2	80,000	84,160
Iron and steel,	1	510,000	500,310
Iron and steel forgings,	2	94,510	136,945
Liquors (distilled),	1	231,500	358,131
Liquors (malt),	1	21,500	13,330

Idle Establishments — 1900 — Concluded.

Kinds of Goods Made and Work Done.	Number of Idle Establishments	Amount of Capital Invested	Estimated Value of Goods Made and Work Done
Lumber and timber products,	5	$24,096	$25,132
Lumber and planing mill products,	4	49,720	75,922
Marble and stone work,	8	20,130	19,607
Masonry (brick and stone),	4	20,800	92,706
Mineral and soda waters,	1	60,000	63,780
Nails and spikes (cut and wrought) including wire nails,	1	38,715	44,600
Paper and wood pulp,	3	734,908	609,239
Pottery, terra cotta, and fire clay products,	2	98,800	43,274
Silk and silk goods,	2	19,000	20,026
Tinsmithing, coppersmithing, etc.,	3	16,113	27,714
Wood turning and carving,	1	30,000	32,760
Woollen goods,	16	1,086,157	1,010,126
Worsted goods,	2	388,643	343,949
All other industries,	36	66,728	53,449
Totals,	148	$5,583,033	$5,368,979

In the following table, we reproduce the value of goods made and work done for 1895 and 1900 by industrial groups:

Manufactures: By Classified Industrial Groups.

Industrial Groups.	Value of Goods Made and Work Done		Increase (+) or Decrease (−) in 1900	
	1895	1900	Amounts	Percentages
Animal.	$8,969,234	$9,758,981	+$789,747	+8.81
Fertilizers,	1,750,887	2,074,590	+323,703	+18.49
Glue, isinglass, and starch,	1,147,913	1,303,650	+155,737	+13.57
Hair work (animal and human),	559,928	137,240	−422,688	−75.49
Ivory, bone, shell, and horn goods, etc.,	1,242,929	1,873,778	+630,849	+50.76
Tallow, candles, soap, and grease,	4,267,577	4,369,723	+102,146	+2.39
Chemical.	20,106,217	23,702,103	+3,595,886	+17.88
Chemical preparations (compounded),	1,443,914	2,021,730	+577,816	+40.02
Drugs and medicines,	7,740,682	6,466,660	−1,274,022	−16.46
Dyeing (custom work),	659,792	522,616	−137,176	−20.79
Dyestuffs,	934,277	1,459,776	+525,499	+56.25
Gas and residual products,	4,879,085	7,204,708	+2,325,623	+47.67
Oils and illuminating fluids,	1,044,609	1,751,088	+706,479	+67.63
Paints, colors, and crude chemicals,	1,414,286	2,005,982	+591,696	+41.84
Polishes and dressing,	1,989,572	2,269,543	+279,971	+14.07
Food.	99,146,963	118,090,341	+18,943,378	+19.11
Food preparations,	84,331,352	100,306,031	+15,974,679	+18.94
Liquors and beverages (not spirituous),	1,029,356	1,267,879	+238,523	+23.17
Liquors: malt, distilled, and fermented,	13,786,255	16,516,431	+2,730,176	+19.80

Manufactures: By Classified Industrial Groups — Continued.

Industrial Groups.	Value of Goods Made and Work Done		Increase (+) or Decrease (−) in 1900	
	1895	1900	Amounts	Percentages
Leather.	$149,998,298	$173,909,315	+$23,911,017	+15.94
Boots and shoes,	122,135,081	143,289,259	+21,154,178	+17.32
Leather and leather goods,	25,694,407	28,666,895	+2,972,488	+11.57
Saddlery and harness,	2,168,810	1,953,161	−215,649	−9.94
Metal.	72,145,275	94,769,161	+22,623,886	+31.36
Arms and ammunition,	1,804,943	2,968,651	+1,163,708	+64.47
Artisans' tools,	3,046,393	3,749,864	+703,471	+23.09
Bicycles, tricycles, etc.,	4,476,904	3,947,924	−528,980	−11.82
Clocks, watches, and jewelry,	9,790,601	14,754,623	+4,964,022	+50.70
Cooking, lighting, and heating apparatus,	3,791,330	4,025,078	+233,748	+6.17
Electrical apparatus and appliances,	6,273,904	12,012,257	+5,738,353	+91.46
Electroplating,	286,662	297,760	+11,098	+3.87
Metals and metallic goods,	40,297,899	50,334,171	+10,036,272	+24.91
Scientific instruments and appliances,	2,376,639	2,678,833	+302,194	+12.72
Metal and Wood.	71,330,900	102,785,521	+31,454,621	+44.10
Agricultural implements,	1,051,113	552,689	−498,424	−47.42
Carriages and wagons,	7,320,422	7,947,512	+627,090	+8.57
Furniture,	15,280,896	18,264,693	+2,983,797	+19.53
Machines and machinery,	33,492,848	60,362,154	+26,869,306	+80.22
Models, lasts, and patterns,	1,122,845	1,237,795	+114,950	+10.24
Musical instruments and materials,	6,774,218	6,643,290	−130,928	−1.93
Railroad construction and equipment,	4,632,250	4,719,934	+87,684	+1.89
Shipbuilding,	1,656,308	3,057,454	+1,401,146	+84.59
Mineral.	11,289,520	14,259,774	+2,970,254	+26.31
Brick, tiles, and sewer pipe,	2,077,099	1,468,264	−608,835	−29.31
Cement, kaolin, lime, and plaster,	482,907	787,529	+304,622	+63.08
Concrete walks, paving, etc.,	233,755	1,354,868	+1,121,113	+479.61
Crayons, pencils, crucibles, etc.,	75,890	126,567	+50,677	+66.78
Earthen, plaster, and stone ware,	240,441	713,246	+472,805	+196.64
Emery and sand paper and cloth, etc.,	819,996	1,048,296	+228,300	+27.84
Glass,	490,289	715,273	+224,984	+45.89
Stone,	6,869,143	8,045,731	+1,176,588	+17.13
Paper.	30,435,690	33,939,548	+3,503,858	+11.51
Boxes, paper	2,480,666	4,145,292	+1,664,626	+67.10
Paper and paper goods,	27,955,024	29,794,256	+1,839,232	+6.58
Rubber.	26,172,939	31,553,252	+5,380,313	+20.56
Hose: rubber, linen, etc.,	1,205,820	1,178,178	−27,642	−2.29
Rubber and elastic goods,	24,967,119	30,375,074	+5,407,955	+21.66
Textile.	236,426,005	278,061,081	+41,635,076	+17.61
Awnings, sails, tents, etc.,	601,158	770,113	+168,955	+28.10
Carpetings,	7,447,115	7,391,576	−55,539	−0.75
Clothing,	38,041,033	47,441,700	+9,400,667	+24.71
Cordage and twine,	5,272,609	10,530,071	+5,257,462	+99.71
Cotton goods,	93,615,560	114,112,363	+20,496,803	+21.89
Cotton, woollen, and other textiles,	2,467,682	-	-	-
Flax, hemp, and jute goods,	3,053,777	2,024,887	−1,028,890	−33.69
Hosiery and knit goods,	6,146,799	6,640,936	+494,137	+8.04

Manufactures: By Classified Industrial Groups — Concluded.

Industrial Groups.	Value of Goods Made and Work Done		Increase (+) or Decrease (−) in 1900	
	1895	1900	Amounts	Percentages
Textile — Con.				
Mixed textiles,	$1,916,950	$1,526,830	−$390,120	−20.35
Print works, dye works, and bleacheries,	23,474,964	8,885,790	−14,589,174	−62.15
Silk and silk goods,	4,041,399	5,957,532	+1,916,133	+47.41
Woollen goods,	29,370,963	32,221,920	+2,850,957	+9.71
Worsted goods,	20,975,996	40,557,363	+19,581,367	+93.35
Wood.	17,948,613	21,850,126	+3,901,513	+21.74
Boxes, wooden	3,674,927	3,893,241	+218,314	+5.94
Building materials,	4,745,927	6,292,281	+1,546,354	+32.58
Burial cases, caskets, coffins, etc.,	454,320	682,922	+228,602	+50.32
Charcoal and kindlers,	13,747	9,766	−3,981	−28.96
Corks, bungs, and taps,	58,532	117,149	+58,617	+100.15
Lumber,	4,400,556	6,526,230	+2,125,674	+48.30
Wooden goods,	4,600,604	4,328,537	−272,067	−5.91
Miscellaneous.	105,837,648	133,274,152	+27,436,504	+25.92
Brooms, brushes, and mops,	1,431,492	2,026,416	+594,924	+41.56
Building,	63,285,229	75,675,347	+12,390,118	+19.58
Buttons and dress trimmings,	1,070,154	681,081	−389,073	−36.36
Fancy articles, etc.,	723,426	1,243,682	+520,256	+71.92
Fine arts and taxidermy,	41,112	58,096	+16,984	+41.31
Fireworks and matches,	150,510	301,296	+150,786	+100.18
Ink, mucilage, and paste,	564,078	1,424,870	+860,792	+152.60
Perfumes, toilet articles, etc.,	309,584	349,043	+39,459	+12.75
Photographs and photographic materials,	1,747,470	2,257,808	+510,338	+29.20
Printing, publishing, and bookbinding,	23,341,640	35,622,040	+12,280,400	+52.61
Sporting and athletic goods,	662,898	517,481	−145,417	−21.94
Straw and palm leaf goods,	5,626,638	4,383,486	−1,243,152	−22.09
Tobacco, snuff, and cigars,	4,563,069	5,328,390	+765,321	+16.77
Toys and games (children's),	806,950	660,992	−145,958	−18.09
Trunks and valises,	217,088	338,537	+121,449	+55.94
Whips, lashes, and stocks,	1,296,310	1,651,221	+354,911	+27.38
Establishments each producing less than $500 annually,*	-	754,366	-	-

Recapitulation: By Groups.

Total Groups.	$849,807,302	$1,035,953,355	+$186,146,053	+21.90
Animal,	8,969,234	9,758,981	+789,747	+8.81
Chemical,	20,106,217	23,702,103	+3,595,886	+17.88
Food,	99,146,963	118,090,341	+18,943,378	+19.11
Leather,	149,998,298	173,909,315	+23,911,017	+15.94
Metal,	72,145,275	94,769,161	+22,623,886	+31.36
Metal and wood,	71,330,900	102,785,521	+31,454,621	+44.10
Mineral,	11,289,520	14,259,774	+2,970,254	+26.31
Paper,	30,435,690	33,939,548	+3,503,858	+11.51
Rubber,	26,172,939	31,553,252	+5,380,313	+20.56
Textile,	236,426,005	278,061,081	+41,635,076	+17.61
Wood,	17,948,613	21,850,126	+3,901,513	+21.74
Miscellaneous,	105,837,648	133,274,152	+27,436,504	+25.92

* See second paragraph on page 127.

In the following table, we show the average number of persons employed in 1895, by industries, in comparison with the average number of men, women, and children in 1900:

Persons Employed: by Industries.

Industries.	Average Number of Persons Employed 1895	Average Number of Persons Employed — 1900			
		Men over 16 Years	Women over 16 Years	Children under 16 Years	Total
Agricultural implements,	600	311	–	1	312
Arms and ammunition,	1,699	1,561	2	40	1,603
Artisans' tools,	2,105	1,942	103	13	2,058
Awnings, sails, tents, etc.,	256	260	94	–	354
Boots and shoes,	59,829	43,976	20,849	1,109	65,934
Boxes (paper and wooden),	4,576	3,068	2,907	118	6,093
Brick, tiles, and sewer pipe,	1,816	1,426	–	3	1,429
Brooms, brushes, and mops,	830	554	519	32	1,105
Building,	29,244	35,758	30	44	35,832
Burial cases, caskets, coffins, etc.,	242	237	47	–	284
Buttons and dress trimmings,	1,014	302	443	27	772
Carpetings,	4,682	2,027	1,955	504	4,486
Carriages and wagons,	6,623	6,010	81	17	6,108
Cement, kaolin, lime, and plaster,	166	336	–	–	336
Charcoal and kindlers,	7	6	–	–	6
Chemical preparations (compounded),	422	580	39	3	622
Clocks, watches, and jewelry,	6,267	4,202	2,304	29	6,535
Clothing,	17,530	7,469	18,029	202	25,700
Concrete walks, paving, etc.,	183	949	1	1	951
Cooking, lighting, and heating apparatus,	2,147	1,869	35	8	1,912
Cordage and twine,	2,633	2,170	1,412	151	3,733
Corks, bungs, and taps,	37	42	19	–	61
Cotton goods,	83,113	45,488	41,501	5,972	92,961
Cotton, woollen, and other textiles,	1,755	–	–	–	–
Crayons, pencils, crucibles, etc.,	47	–	–	–	–
Drugs and medicines,	1,143	661	739	10	1,410
Dyestuffs,	172	66	34	–	100
Earthen, plaster, and stone ware,	231	526	54	4	584
Electrical apparatus and appliances,	3,449	4,883	917	103	5,903
Electroplating,	209	198	17	4	219
Emery and sand paper and cloth, etc.,	323	362	9	–	371
Fancy articles, etc.,	461	209	269	3	481
Fertilizers,	303	226	1	–	227
Fine arts and taxidermy,	18	19	–	–	19
Fireworks and matches,	84	*–	*–	*–	*–
Flax, hemp, jute, and linen goods,	2,184	555	796	123	1,474
Food preparations,	13,555	10,965	3,711	190	14,866
Furniture,	6,929	7,648	1,167	47	8,862
Gas and residual products,	1,176	1,406	3	–	1,409
Glass,	412	514	26	25	565
Glue, isinglass, and starch,	385	316	42	–	358
Hair work (animal and human),	193	10	63	1	74

* Included under "Other industries" in 1900.

Persons Employed: by Industries — Concluded.

Industries.	Average Number of Persons Employed 1895	Average Number of Persons Employed — 1900			
		Men over 16 Years	Women over 16 Years	Children under 16 Years	Total
Hose: rubber, linen, etc.,	559	283	99	9	391
Hosiery and knit goods,	5,314	1,666	4,553	460	6,679
Ink, mucilage, and paste,	96	102	60	1	163
Ivory, bone, shell, and horn goods, etc.,	986	1,083	209	34	1,326
Leather,	8,181	7,389	262	14	7,665
Liquors and beverages (not spirituous),	417	447	7	6	460
Liquors: malt, distilled, and fermented,	2,134	2,391	30	3	2,424
Lumber,	1,911	5,116	61	25	5,202
Machines and machinery,	21,598	33,655	472	69	34,196
Metals and metallic goods,	22,723	21,141	2,004	331	23,476
Mixed textiles,	760	402	47	15	464
Models, lasts, and patterns,	550	661	12	–	673
Musical instruments and materials,	3,312	3,181	241	1	3,423
Oils and illuminating fluids,	130	149	10	1	160
Paints, colors, and crude chemicals,	274	311	26	–	337
Paper and paper goods,	12,616	6,928	4,742	45	11,715
Perfumes, toilet articles, etc.,	47	21	35	1	57
Photographs and photographic materials,	917	537	362	11	910
Polishes and dressing,	338	170	223	–	393
Printing, publishing, and bookbinding,	11,932	10,357	4,491	337	15,185
Print works, dye works, and bleacheries,	7,459	4,052	970	98	5,120
Railroad construction and equipment,	3,164	3,572	3	–	3,575
Rubber and elastic goods,	10,504	6,202	4,808	184	11,194
Saddlery and harness,	934	763	21	1	785
Scientific instruments and appliances,	1,482	1,331	306	66	1,703
Shipbuilding,	865	1,606	–	–	1,606
Silk and silk goods,	2,427	1,102	1,837	171	3,110
Sporting and athletic goods,	554	195	109	–	304
Stone,	6,148	5,715	–	6	5,721
Straw and palm leaf goods,	3,441	932	1,308	5	2,245
Tallow, candles, soap, and grease,	897	851	83	13	947
Tobacco, snuff, and cigars,	2,419	2,038	700	14	2,752
Toys and games (children's),	555	315	107	12	434
Trunks and valises,	117	117	18	1	136
Whips, lashes, and stocks,	505	480	194	21	695
Wooden goods,	5,087	2,629	37	29	2,695
Woollen goods,	19,365	11,734	5,910	678	18,322
Worsted goods,	12,504	9,380	8,410	1,077	18,867
Other industries,	–	3,672	2,124	33	5,829
Establishments each producing less than $500 annually,*	–	–	–	–	760
All Industries,	432,272	341,783	143,109	12,556	498,208

* See second paragraph on page 127.

In the following table is given the total wages paid to men, women, and children, for 1900, in comparison with the total amount paid in 1895 to persons of both sexes:

Wages Paid: by Industries.

Industries.	Total Amount Paid in Wages 1895	Total Amount Paid in Wages—1900			
		Men over 16 Years	Women over 16 Years	Children under 16 Years	Total
Agricultural implements,	$299,282	$159,520	–	$180	$159,700
Arms and ammunition,	820,955	854,319	$1,096	7,150	862,565
Artisans' tools,	1,140,337	1,009,559	30,565	3,000	1,043,124
Awnings, sails, tents, etc.,	149,920	157,630	34,582	–	192,212
Boots and shoes,	28,276,255	23,180,649	7,247,296	207,975	30,635,920
Boxes (paper and wooden),	1,778,517	1,474,190	846,050	18,689	2,338,929
Brick, tiles, and sewer pipe,	803,350	621,661	–	650	622,311
Brooms, brushes, and mops,	289,753	273,701	146,636	5,452	425,789
Building,	17,050,540	21,323,244	9,458	9,780	21,342,482
Burial cases, caskets, coffins, etc.,	146,122	140,662	19,551	–	160,213
Buttons and dress trimmings,	343,149	141,049	131,929	3,224	276,202
Carpetings,	1,749,670	998,330	629,938	94,435	1,722,703
Carriages and wagons,	3,743,639	3,176,691	34,169	3,662	3,214,522
Cement, kaolin, lime, and plaster,	77,757	193,409	–	–	193,409
Charcoal and kindlers,	2,281	2,295	–	–	2,295
Chemical preparations (compounded),	230,983	328,631	9,476	609	338,716
Clocks, watches, and jewelry,	3,180,056	2,401,687	838,907	6,113	3,246,707
Clothing,	6,822,549	4,498,156	5,913,001	35,158	10,446,315
Concrete walks, paving, etc.,	82,384	485,260	260	300	485,820
Cooking, lighting, and heating apparatus,	1,355,304	1,143,360	10,697	1,767	1,155,824
Cordage and twine,	872,766	820,409	400,396	29,104	1,249,909
Corks, bungs, and taps,	9,579	18,695	3,800	–	22,495
Cotton goods,	27,447,232	18,482,895	12,983,729	1,182,354	32,648,978
Drugs and medicines,	476,953	286,696	175,860	1,902	464,458
Dyestuffs,	87,078	37,610	14,004	–	51,614
Earthen, plaster, and stone ware,	104,269	246,136	15,064	941	262,141
Electrical apparatus and appliances,	1,740,222	2,818,134	270,775	25,128	3,114,037
Electroplating,	111,307	108,454	4,533	792	113,779
Emery and sand paper and cloth, etc.,	173,153	211,063	3,128	–	214,191
Fancy articles, etc.,	160,403	131,092	75,240	420	206,752
Fertilizers,	163,797	114,619	464	–	115,083
Fine arts and taxidermy,	9,871	10,043	–	–	10,043
Flax, hemp, jute, and linen goods,	662,947	243,386	219,118	22,682	485,186
Food preparations,	6,458,105	5,803,151	880,108	31,124	6,714,383
Furniture,	3,598,771	3,969,934	388,657	8,929	4,367,520
Gas and residual products,	699,342	811 587	1,872	–	813,459
Glass,	208,365	290,294	7,272	5,046	302,612
Glue, isinglass, and starch,	173,418	147,834	12,471	–	160,305
Hair work (animal and human),	73,695	4,797	21,683	130	26,610
Hose: rubber, linen, etc.,	253,018	168,533	27,142	3,818	199,493
Hosiery and knit goods,	1,711,511	756,808	1,264,361	75,684	2,096,853
Ink, mucilage, and paste,	49,328	62,265	20,961	156	83,382
Ivory, bone, shell, and horn goods, etc.,	393,244	489,451	63,537	6,797	559,785

Wages Paid: by Industries — Concluded.

Industries.	Total Amount Paid in Wages 1895	Total Amount Paid in Wages — 1900			
		Men over 16 Years	Women over 16 Years	Children under 16 Years	Total
Leather,	$3,914,352	$3,605,767	$77,784	$2,742	$3,686,293
Liquors and beverages (not spirituous),	209,337	225,775	5,371	910	232,056
Liquors: malt, distilled, and fermented,	1,387,456	1,760,118	9,337	550	1,770,005
Lumber,	831,506	2,535,233	17,374	6,547	2,559,154
Machines and machinery,	11,624,673	18,841,630	149,364	12,109	19,003,103
Metals and metallic goods,	11,405,493	11,955,620	603,201	86,991	12,645,812
Mixed textiles,	294,828	165,861	12,512	2,422	180,795
Models, lasts, and patterns,	389,066	434,365	2,997	-	437,362
Musical instruments and materials,	2,014,810	1,965,489	71,502	162	2,037,153
Oils and illuminating fluids,	68,949	80,485	3,550	200	84,235
Paints, colors, and crude chemicals,	147,026	166,473	9,628	-	176,101
Paper and paper goods,	5,150,118	3,716,214	1,332,897	9,186	5,058 297
Perfumes, toilet articles, etc.,	18,787	13,626	12,850	180	26,656
Photographs and photographic materials,	417,272	320,972	141,766	1,507	464,245
Polishes and dressing,	178,382	104,761	58,617	-	163,378
Printing, publishing, and bookbinding,	6,634,086	7,096,043	1,633,037	60,334	8,789,414
Print works, dye works, and bleacheries,	3,131,436	1,956,364	317,090	18,282	2,291,736
Railroad construction and equipment,	1,821,117	2,131,770	1,047	-	2,132,817
Rubber and elastic goods,	4,555,991	3,279,910	1,553,559	24,790	4,858,259
Saddlery and harness,	486,362	435,922	6,914	150	442,986
Scientific instruments and appliances,	660,471	674,823	92,192	11,049	778,064
Shipbuilding,	561,082	1,035,993	-	-	1,035,993
Silk and silk goods,	812,785	506,282	562,989	41,053	1,110,324
Sporting and athletic goods,	242,107	99,020	34,141	-	133,161
Stone,	3,163,208	3,167,242	-	1,420	3,168,662
Straw and palm leaf goods,	1,479,791	582,915	454,656	1,197	1,038,768
Tallow, candles, soap, and grease,	435,088	431,844	19,288	2,766	453,898
Tobacco, snuff, and cigars,	1,418,743	1,443,830	302,755	3,091	1,749,676
Toys and games (children's),	225,812	133,385	21,299	876	155,560
Trunks and valises,	55,448	59,656	4,956	300	64,912
Whips, lashes, and stocks,	208,520	228,372	58,425	5,093	291,890
Wooden goods,	2,671,462	1,117,673	10,943	5,195	1,133,811
Woollen goods,	7,129,016	5,063,498	1,901,704	131,510	7,096,712
Worsted goods,	4,545,449	4,177,429	2,654,009	224,147	7,055,585
Other industries,	698,853	2,043,575	735,350	5,818	2,784,743
Establishments each producing less than $500 annually,*	-	-	-	-	49,321
All Industries,	$192,970,059	$180,155,824	$45,630,890	$2,453,728	$228,289,763

* See second paragraph on page 127.

Manufactures: by Cities and Towns.

In the United States Census Bulletins, certain cities and towns of the Commonwealth have been selected for presentation, and in the following table we reproduce the figures showing the number of establishments, the amount of capital invested, the average number of persons employed, the total amount paid in wages, and the value of stock used in 1900:

Establishments, Capital, Wages, etc.: By Cities and Towns.

The State, Cities, and Towns.	Number of Establishments	Amount of Capital Invested	Average Number of Persons Employed	Total Wages Paid	Value of Stock Used
THE STATE.	31,953	$826,160,280	498,208	$228,289,763	$552,919,846
Abington,	67	758,395	1,568	713,181	1,712,764
Adams,	107	6,646,981	3,315	1,234,459	1,839,969
Amesbury,	152	2,949,565	2,347	1,027,222	2,090,449
Amherst,	67	559,085	525	253,906	716,093
Andover,	57	2,096,294	1,103	436,212	1,073,222
Arlington,	90	406,128	323	197,099	268,934
Athol,	129	1,722,593	1,455	668,445	1,307,815
Attleborough,	179	5,833,100	5,106	2,354,880	4,106,820
Beverly,	227	2,552,955	2,810	1,390,066	2,546,186
Blackstone,	23	5,023,339	1,742	776,201	2,850,300
Boston,	7,247	143,311,376	72,142	39,184,191	99,557,019
Bridgewater,	54	866,911	838	478,381	1,300,927
Brockton,	428	10,193,688	10,986	6,166,462	15,980,653
Brookfield,	35	393,859	455	202,800	544,591
Cambridge,	782	26,662,751	12,986	6,785,070	23,986,638
Canton,	59	2,214,623	749	339,899	929,509
Chelsea,	308	8,211,682	3,332	1,625,875	5,764,409
Chicopee,	122	6,595,802	4,331	1,668,362	5,666,713
Clinton,	104	7,098,744	4,021	1,600,948	2,913,952
Dalton,	33	1,724,823	848	351,101	726,946
Danvers,	90	1,398,834	974	489,432	1,756,846
Dedham,	96	777,098	678	305,824	687,550
Dudley,	18	1,978,291	1,195	437,177	1,018,132
Easthampton,	63	2,300,366	1,714	658,933	1,452,605
Easton,	46	1,244,991	706	310,994	803,925
Everett,	168	6,107,735	2,141	1,068,987	2,725,197
Fairhaven,	47	329,491	313	170,096	126,508
Fall River,	785	58,549,934	32,780	11,739,129	19,789,859
Fitchburg,	308	13,033,898	6,796	3,113,078	8,062,713
Foxborough,	45	308,048	491	221,858	359,607
Framingham,	144	3,092,662	2,475	1,018,339	2,010,281
Franklin,	51	1,823,556	888	397,846	954,409
Gardner,	118	6,073,152	3,083	1,299,492	2,454,237
Gloucester,	392	4,687,559	3,379	1,428,896	4,862,660

Establishments, Capital, Wages, etc.: By Cities and Towns — Continued.

The State, Cities, and Towns.	Number of Establishments	Amount of Capital Invested	Average Number of Persons Employed	Total Wages Paid	Value of Stock Used
Grafton,	49	$1,938,007	1,256	$466,729	$927,957
Great Barrington,	94	1,436,391	1,010	415,547	832,032
Greenfield,	141	1,725,880	1,223	551,550	884,443
Groveland,	11	798,941	415	172,308	594,025
Hardwick,	16	1,442,618	755	289,932	691,354
Haverhill,	685	6,801,565	10,600	5,035,882	15,628,972
Hinsdale,	14	340,045	250	88,395	275,638
Holyoke,	433	26,760,031	13,454	5,730,998	13,673,969
Hopedale,	4	3,031,796	1,464	790,439	1,214,395
Hudson,	74	1,615,132	1,571	769,625	2,440,180
Hyde Park,	127	3,740,053	2,792	1,317,684	2,747,589
Ipswich,	64	826,419	843	382,277	481,386
Lawrence,	546	49,914,035	22,358	8,972,310	26,175,644
Lee,	71	1,209,509	620	274,004	483,569
Leicester,	20	970,246	647	266,210	641,288
Leominster,	167	3,987,611	3,623	1,600,186	2,986,707
Lowell,	981	46,578,193	31,377	11,821,633	21,727,844
Lynn,	776	17,011,761	17,492	8,576,042	25,456,798
Malden,	242	5,906,279	3,082	1,520,658	4,607,400
Mansfield,	52	557,480	571	274,840	485,531
Marblehead,	100	469,859	1,032	411,372	811,180
Marlborough,	142	2,191,860	2,780	1,304,301	3,057,414
Maynard,	43	2,349,645	838	345,480	833,742
Medford,	141	1,328,106	968	487,793	896,460
Melrose,	106	3,296,048	1,428	695,422	2,403,575
Merrimac,	40	252,812	252	114,739	200,791
Methuen,	74	1,203,412	726	302,934	694,506
Middleborough,	110	1,034,730	1,081	510,724	1,293,425
Milford,	129	1,240,782	1,554	773,144	1,636,739
Millbury,	54	1,047,897	694	270,862	579,605
Milton,	58	291,284	335	189,920	271,787
Monson,	43	690,481	523	234,606	410,372
Montague,	60	2,653,595	1,208	554,186	847,319
Natick,	154	1,061,320	1,502	726,137	2,094,150
New Bedford,	618	29,073,410	16,409	6,730,793	12,727,776
Newburyport,	195	3,863,199	3,076	1,326,719	3,258,571
Newton,	297	5,105,196	3,094	1,581,889	3,065,921
North Adams,	231	14,563,492	6,796	2,949,010	5,410,262
Northampton,	214	2,728,140	2,406	1,140,655	1,974,433
North Andover,	34	1,225,212	873	420,053	655,002
North Attleborough,	116	2,014,999	2,162	1,160,052	1,609,569
Northbridge,	31	3,826,408	2,648	1,130,404	1,140,798
North Brookfield,	51	962,164	1,307	643,835	2,073,095
Norwood,	53	2,437,949	1,511	859,242	1,823,438
Orange,	81	2,770,120	1,315	635,682	1,217,293
Palmer,	78	3,104,049	3,053	1,251,992	2,575,330
Peabody,	161	4,437,229	2,881	1,384,126	4,583,297
Pittsfield,	261	6,084,849	3,863	1,627,790	3,616,578

Establishments, Capital, Wages, etc.: By Cities and Towns — Concluded.

The State, Cities, and Towns.	Number of Establishments	Amount of Capital Invested	Average Number of Persons Employed	Total Wages Paid	Value of Stock Used
Quincy,	339	$2,208,197	2,546	$1,378,823	$1,300,260
Randolph,	54	441,070	725	359,150	903,917
Reading,	72	455,247	448	188,645	534,621
Revere,	82	502,819	255	133,129	170,181
Rockland,	81	998,824	1,071	515,974	1,363,959
Rockport,	41	737,225	566	255,634	142,397
Salem,	446	7,450,935	6,424	2,842,678	7,159,987
Salisbury,	11	11,970	14	6,988	8,248
Shelburne,	33	132,063	90	39,096	50,112
Somerville,	378	10,131,596	4,342	2,199,491	17,346,772
Southbridge,	109	4,269,358	2,871	1,225,064	1,947,000
South Hadley,	24	758,186	254	109,332	238,361
Spencer,	81	1,519,234	1,665	613,917	1,812,515
Springfield,	817	17,105,947	10,123	5,176,299	9,194,841
Stoneham,	94	822,071	1,290	544,213	1,894,999
Stoughton,	56	2,125,321	1,071	451,274	1,521,417
Taunton,	284	11,737,399	7,102	3,331,680	5,993,237
Wakefield,	97	3,209,070	1,616	784,644	1,354,253
Walpole,	44	2,010,385	684	370,945	825,216
Waltham,	275	9,152,169	5,392	2,630,929	2,317,792
Ware,	100	3,284,599	2,777	979,930	2,119,178
Warren,	39	1,379,563	1,027	426,594	688,187
Watertown,	105	4,549,242	2,304	1,130,099	3,811,808
Webster,	83	3,733,575	2,490	870,244	2,447,448
Westborough,	57	948,047	843	383,586	1,087,315
Westfield,	186	4,345,372	2,641	1,229,643	2,401,460
West Springfield,	41	934,945	626	345,776	561,675
Weymouth,	130	4,427,328	1,998	911,502	3,246,899
Whitman,	65	2,054,815	2,059	1,092,024	3,160,456
Wilbraham,	15	711,426	171	81,100	558,198
Williamstown,	38	815,368	365	141,864	182,511
Winchendon,	53	1,454,853	1,238	462,582	861,523
Winchester,	52	3,724,461	1,155	666,064	1,855,159
Winthrop,	43	106,445	118	60,543	100,643
Woburn,	123	2,983,705	1,596	757,670	3,064,985
Worcester,	1,071	42,966,743	25,593	12,894,784	26,666,176
Other towns,	2,678	53,636,166	31,585	13,452,580	36,156,662
Establishments each producing less than $500 annually,*	2,773	2,895,993	760	49,321	201,891

* See second paragraph on page 127.

In the following table, we compare the value of goods made and work done in certain cities and towns of the Commonwealth and present also the percentages of increase or decrease in the population in 1900 as compared with 1895:

Value of Goods Made and Work Done: By Cities and Towns.

The State, Cities, and Towns.	Value of Goods Made and Work Done		Percentages of Increase (+) or Decrease (−) in 1900	
	1895	1900	In Manufactures	In Population
THE STATE.	$849,807,302	$1,035,953,355	+21.90	+12.21
Abington,	1,679,728	2,684,644	+59.83	+6.70
Adams,	2,508,210	4,189,239	+67.02	+42.07
Amesbury,	3,268,122	3,898,251	+19.28	−5.14
Amherst,	827,933	1,316,143	+58.97	+5.08
Andover,	1,552,421	1,888,329	+21.64	+10.87
Arlington,	525,850	681,010	+29.51	+32.05
Athol,	2,337,374	2,549,204	+9.06	−4.11
Attleborough,	4,225,189	9,442,752	+123.49	+36.76
Beverly,	3,692,594	4,933,752	+33.61	+17.60
Blackstone,	3,728,881	6,593,641	+76.83	−5.27
Boston,	165,774,080	206,081,767	+24.31	+12.87
Bridgewater,	528,752	2,075,377	+292.50	+23.90
Brockton,	21,913,734	26,384,881	+20.40	+20.80
Brookfield,	1,170,286	809,420	−30.84	−6.62
Cambridge,	37,673,284	39,164,013	+3.96	+12.55
Canton,	2,071,862	1,650,829	−20.32	−1.12
Chelsea,	8,994,330	10,333,549	+14.89	+8.98
Chicopee,	6,667,650	8,704,907	+30.55	+16.73
Clinton,	4,355,409	5,446,763	+25.06	+18.87
Dalton,	1,361,709	1,619,191	+18.91	−6.11
Danvers,	2,619,685	2,654,936	+1.35	+4.41
Dedham,	748,999	1,260,125	+68.24	+3.41
Dudley,	1,497,540	1,661,978	+10.98	+10.93
Easthampton,	2,261,168	2,669,753	+18.07	+16.97
Easton,	815,394	1,523,467	+86.84	+8.65
Everett,	1,884,193	5,038,120	+167.39	+31.03
Fairhaven,	406,593	408,099	+0.37	+6.86
Fall River,	38,934,678	43,071,530	+10.63	+17.56
Fitchburg,	10,629,400	14,253,522	+34.10	+19.39
Foxborough,	1,031,756	777,219	−24.67	+1.46
Framingham,	3,008,178	3,714,732	+23.49	+18.82
Franklin,	2,293,678	1,686,041	−26.49	−2.32
Gardner,	5,321,591	4,763,863	−10.48	+17.76
Gloucester,	5,590,366	7,843,783	+40.31	−7.41
Grafton,	1,608,924	1,708,342	+6.18	−4.55
Great Barrington,	725,388	1,671,574	+130.44	+22.11
Greenfield,	1,118,379	2,093,352	+87.18	+27.26
Groveland,	791,136	857,736	+8.42	+1.84
Hardwick,	1,138,549	1,173,776	+3.09	+20.64
Haverhill,	19,090,382	24,937,073	+30.63	+23.06
Hinsdale,	540,111	434,627	−19.53	−10.00
Holyoke,	22,781,222	26,283,964	+15.38	+13.37

Value of Goods Made and Work Done: By Cities and Towns — Continued.

The State, Cities, and Towns.	Value of Goods Made and Work Done		Percentages of Increase (+) or Decrease (−) in 1900	
	1895	1900	In Manufactures	In Population
Hopedale,	$1,379,688	$3,319,747	+140.62	+51.56
Hudson,	2,931,604	3,621,137	+23.52	+2.75
Hyde Park,	3,849,577	5,007,409	+30.08	+11.99
Ipswich,	1,175,950	1,194,826	+1.61	−1.31
Lawrence,	31,026,679	44,703,278	+44.08	+19.93
Lee,	983,058	1,168,328	+18.85	−11.56
Leicester,	1,244,128	1,063,669	−14.50	+5.46
Leominster,	4,529,459	5,856,174	+29.29	+34.53
Lowell,	39,124,645	44,774,525	+14.40	+12.57
Lynn,	34,444,091	41,633,845	+20.87	+9.88
Malden,	7,436,724	7,959,292	+7.03	+13.32
Mansfield,	936,496	1,035,804	+10.60	+7.63
Marblehead,	1,308,433	1,410,406	+7.79	−1.16
Marlborough,	5,573,522	4,986,399	−10.53	−9.13
Maynard,	1,615,644	1,534,003	−5.05	+1.68
Medford,	1,714,890	1,907,624	+11.24	+26.05
Melrose,	3,440,132	3,945,580	+14.69	+8.33
Merrimac,	503,999	391,793	−22.26	−7.39
Methuen,	1,698,745	1,273,920	−25.01	+32.02
Middleborough,	2,447,101	2,298,946	−6.05	+2.93
Milford,	2,539,335	3,071,493	+20.96	+26.98
Millbury,	1,347,643	1,082,294	−19.69	−14.59
Milton,	355,428	675,793	+90.13	+19.21
Monson,	1,296,835	876,123	−32.44	−9.18
Montague,	1,690,974	1,985,693	+17.43	+1.52
Natick,	2,221,398	3,298,777	+48.50	+7.65
New Bedford,	20,537,992	25,681,671	+25.04	+13.02
Newburyport,	5,175,736	5,685,768	+9.85	−0.51
Newton,	5,123,496	6,322,232	+23.40	+21.74
North Adams,	14,224,317	11,682,663	−17.87	+26.47
Northampton,	4,406,421	4,193,486	−4.83	+11.33
North Andover,	1,383,267	1,345,589	−2.72	+18.88
North Attleborough,	2,959,794	3,990,731	+34.83	+10.30
Northbridge,	2,221,360	3,028,661	+36.34	+33.11
North Brookfield,	2,380,775	3,018,676	+26.79	−1.04
Norwood,	2,468,097	3,348,974	+35.69	+19.81
Orange,	2,470,989	2,602,253	+5.31	+2.97
Palmer,	2,715,620	4,483,036	+65.08	+13.75
Peabody,	6,085,854	7,261,647	+19.32	+9.67
Pittsfield,	6,163,295	7,135,770	+15.78	+6.38
Quincy,	3,532,472	3,948,932	+11.79	+15.39
Randolph,	801,271	1,425,890	+77.95	+8.09
Reading,	865,591	944,422	+9.11	+5.34
Revere,	379,657	451,215	+18.85	+40.04

Value of Goods Made and Work Done: By Cities and Towns — Concluded.

The State, Cities, and Towns.	Value of Goods Made and Work Done		Percentages of Increase (+) or Decrease (−) in 1900	
	1895	1900	In Manufactures	In Population
Rockland,	$1,771,302	$2,288,972	+29.23	−3.55
Rockport,	863,175	634,755	−26.46	−13.18
Salem,	10,465,019	12,257,449	+17.13	+4.30
Salisbury,	362,284	24,325	−93.29	+19.85
Shelburne,	378,047	140,575	−62.82	−3.33
Somerville,	16,064,706	21,776,511	+35.55	+18.09
Southbridge,	3,039,374	3,854,638	+26.82	+21.52
South Hadley,	698,418	522,810	−25.14	+1.87
Spencer,	2,609,758	2,784,994	+6.71	+0.17
Springfield,	16,569,228	21,207,039	+27.99	+20.45
Stoneham,	2,426,299	2,856,919	+17.75	−1.38
Stoughton,	2,191,232	2,297,798	+4.86	+3.22
Taunton,	9,947,686	12,594,814	+26.61	+14.46
Wakefield,	3,048,394	2,958,656	−2.94	+11.87
Walpole,	1,576,557	1,972,398	+25.11	+19.31
Waltham,	5,000,456	6,934,381	+38.67	+12.48
Ware,	2,408,958	3,681,069	+52.81	+8.00
Warren,	1,558,374	1,275,574	−18.15	−0.29
Watertown,	3,062,849	6,078,902	+98.47	+24.63
Webster,	3,509,457	4,086,267	+16.44	+12.89
Westborough,	942,320	1,783,298	+89.25	+3.15
Westfield,	3,834,112	5,072,074	+32.29	+15.45
West Springfield,	1,365,428	1,142,105	−16.36	+16.00
Weymouth,	5,013,316	5,583,144	+11.37	+0.29
Whitman,	3,465,223	5,009,786	+44.57	+7.16
Wilbraham,	644,007	736,173	+14.31	−8.33
Williamstown,	353,007	434,371	+23.05	+2.58
Winchendon,	1,576,328	1,745,925	+10.76	+11.38
Winchester,	2,305,322	3,257,172	+41.29	+17.85
Winthrop,	220,830	242,111	+9.64	+44.51
Woburn,	5,782,266	4,450,566	−23.03	+0.54
Worcester,	41,082,611	53,348,783	+29.86	+19.90
All other towns,	55,264,069	65,355,233	+17.03	+5.40
Aggregates: Cities,	630,462,297	764,161,469	+21.21	+14.10
Aggregates: Towns,	219,345,005	271,037,520	+23.57	+8.54
Establishments each producing less than $500 annually,*	-	754,366	-	-

* See second paragraph on page 127.

The increase in the value of goods made and work done in the cities in 1900 as compared with 1895 is 21.21 per cent, nearly equal to the increase shown for the State (21.90), and in the towns the increase is 23.57 per cent. It is interesting to note that while the cities gained in population at the rate of 14 persons in every 100, the value of product increased at

the rate of $21 in every $100, and that while the population of the towns shows a lower rate of increase per 100 persons, there is a slightly larger rate of product value to each $100.

The value of goods made and work done in the cities in 1895 was 74.19 per cent of the aggregate product of the State, and in 1900, 73.76 per cent.

The value of goods made and work done in the towns in 1895 was 25.81 per cent of the aggregate product of the State, and in 1900, 26.16 per cent.

That the cities, while duly prosperous, did not make such progress as the towns in the aggregate, will be seen by reference to the preceding table. In only one city (Everett) does the percentage of increase exceed 100 per cent, while in four towns (Attleborough, Bridgewater, Great Barrington, and Hopedale) the percentage of increase is in excess of 100 and in the town of Bridgewater the increase is nearly 300 per cent.

Four of the cities show a decrease in the value of goods made and work done, namely, Marlborough, North Adams, Northampton, and Woburn. Marlborough also shows a decrease in population in 1900 as compared with 1895.

Industrial Combinations.

The following table reproduces the figures from the Census Bulletin relating to Industrial Combinations:

Industrial Combinations.

Classification.	1900	Classification.	1900
Number of plants,	123	Children (under 16 years),	1,526
Capital invested,	$118,622,094	Wages paid,	$411,474
Land,	$9,302,285	Miscellaneous expenses,	$5,566,359
Buildings,	$14,072,295	Rent of works,	$97,157
Machinery, tools, and implements,	$29,938,688	Taxes (except internal revenue),	$638,093
Cash and sundries,	$65,308,826	Rent of offices, interest, insurance, etc.,	$4,818,693
Salaried officers, clerks, etc.,	1,846	Contract work,	$12,416
Salaries paid,	$2,621,304	Cost of materials used,	$64,510,139
Average number wage earners,	38,801	Principal materials, including mill supplies and freight,	$62,760,044
Total wages paid,	$17,075,415	Fuel and rent of power and heat,	$1,750,095
Males (16 years and over),	26,897	Value of goods made and work done,	$102,921,247
Wages paid,	$13,479,745		
Females (16 years and over),	10,378		
Wages paid,	$3,184,196		

In the following table we show the relative proportions of capital invested, persons employed, wages paid, goods made, etc., in the industrial combinations and in all the other establishments in the State for 1900:

Classification.	Percentages	
	Industrial Combinations	All Other Establishments
Amount of capital invested,	14.41	85.59
Value of stock and materials used,	11.66	88.34
Value of goods made and work done,	9.94	90.06
Average number of persons employed,	7.80	92.20
Total amount paid in wages,	7.48	92.52

From this table it is seen that, in 1900, 14.41 per cent of the capital invested in the manufacturing and mechanical industries in the State was invested by industrial combinations. They used 11.66 per cent of the aggregate value of stock and materials used, and produced 9.94 per cent of the total value of goods made and work done. Of the aggregate average number of persons employed, 7.80 per cent were employed by industrial combinations, and to them 7.48 per cent of the total amount disbursed in wages was paid.

Selected Industry Presentations.

For detailed presentation, certain industries have been selected by the United States Census Office, and, in the following pages, we reproduce the figures together with similar data from reports made to this Department.

Paper and Pulp Mills.

In prior United States Censuses, paper and wood pulp were treated as separate industries, but in 1900 the schedule of inquiry was so prepared as to apply to paper mills, pulp mills, and paper and pulp when manufactured in the same plant.

In 1890, there were two pulp mills the returns of which are not included in the figures given for that year. In 1895, the classification adopted by this Department included not only

the manufacture of paper, but also that of paper goods, such as envelopes, stationery, papeteries, tablets, etc. The manufacture of wood pulp was not included under this industry heading. In 1900, as before stated, the figures covered the returns made not only by paper mills but also pulp mills.

Classification.	1890	1895	1900
Number of establishments,	85	160	93
Amount of capital invested,	$22,467,036	$27,336,211	$26,692,922
Value of stock used,	$12,210,458	$17,108,505	$11,918,802
Miscellaneous expenses,	$1,832,753	*	$1,693,505
Value of goods made and work done,	$21,524,173	$27,955,024	$22,141,461
News paper,	$1,308,000	$1,256,939	$840,705
Book paper,	$5,560,523	$5,345,661	$5,501,788
Fine paper,	$8,911,723	$10,096,879	$11,298,628
Wrapping paper,	$3,132,805	$2,907,318	$1,441,291
Boards,	$126,525	$818,061	$954,111
Other paper,	$1,451,951	$1,189,338	$1,512,709
Ground wood pulp,	$58,750	–	$2,000
All other goods made,	$973,896	$6,340,828	$590,229
Average number of persons employed,	7,817	12,616	9,061
Amount paid in wages,	$3,420,459	$5,150,118	$3,938,400

* Not returned in 1895.

The following table gives, in considerable detail, all the facts relating to the 93 establishments making returns to the Federal Census Office in 1900.

Paper and Pulp Mills.

Classification.	1900	Classification.	1900
Number of establishments,	93	Average number of wage earners,	9,061
Private firms,	26	Total wages paid,	$3,938,400
Corporations,	67	Males (16 years and over),	5,626
		Wages paid,	$3,004,087
Capital invested,	$26,692,922	Females (16 years and over),	3,428
Land,	$3,572,658	Wages paid,	$932,873
Buildings,	$5,805,874	Children (under 16 years),	7
Machinery, tools, etc.,	$7,156,007	Wages paid,	$1,440
Cash and sundries,	$10,158,383		
		Miscellaneous expenses,	$1,693,505
Salaried employés,	510	Rent of works,	$9,654
Salaries paid,	$861,152	Taxes (not including internal revenue),	$262,835
Officers of corporations,	80		
Salaries paid,	$273,675	Rent of offices, insurance, interest, etc.,	$1,416,117
Superintendents, clerks, etc.,	430	Contract work,	$4,899
Salaries paid,	$587,477		

Paper and Pulp Mills — Continued.

Classification.	1900	Classification.	1900
Value of stock and materials used,	$11,918,802	Value of goods made and work done,	$22,141,461
Rags of all kinds (tons),	86,715	News paper (tons),	22,194
Cost value,	$3,306,599	Selling value,	$840,705
Old or waste paper (tons),	42,866	Book paper (tons),	39,551
Cost value,	$815,272	Selling value,	$3,120,867
Manila stock, rope, etc. (tons),	10,955	Cover paper (tons),	4,035
Cost value,	$236,238	Selling value,	$367,001
Straw (tons),	26	Plate, litho', map, wood-cut,	
Cost value,	$197	and other paper (tons),	11,879
Domestic spruce for ground wood (cords),	3,052	Selling value,	$1,007,466
Cost value,	$15,912	Card board, bristol board, card middles, tickets, etc. (tons),	13,564
Domestic spruce for sulphite and soda fiber (cords),	18,194	Selling value,	$1,006,454
Cost value,	$94,090	Writing paper (tons),	54,791
Canadian spruce for ground wood (cords),	8,465	Selling value,	$8,751,556
Cost value,	$73,360	All other fine paper (tons),	13,264
Canadian spruce for sulphite and soda fiber (cords),	5,309	Selling value,	$2,547,072
Cost value,	$39,419	Wrapping paper — manila, etc. (tons),	6,697
Domestic poplar for soda fiber (cords),	3,050	Selling value,	$546,388
Cost value,	$17,941	Heavy wrapping paper (tons),	10,254
Other pulp wood for ground wood (cords),	900	Selling value,	$668,118
Cost value,	$4,335	Straw paper (tons),	1,187
Other pulp wood for sulphite and soda fiber (cords),	100	Selling value,	$9,500
Cost value,	$600	Bogus or wood manila paper, all grades (tons),	2,256
Ground wood pulp purchased (tons),	21,308	Selling value,	$107,762
Cost value,	$400,299	All other wrapping paper (tons),	1,844
Soda wood fiber purchased (tons),	25,493	Selling value,	$109,523
Cost value,	$1,069,036	Binders and trunk board (tons),	1,518
Sulphite wood fiber purchased (tons),	36,912	Selling value,	$41,700
Cost value,	$1,709,804	Leather-board (tons),	2,874
Other chemical fiber purchased (tons),	1,861	Selling value,	$190,794
Cost value,	$99,566	Press and album board (tons),	580
Chemicals,	$730,424	Selling value,	$46,692
Clay,	$340,267	Wood pulp board (tons),	2,846
Colors,	$152,301	Selling value,	$144,435
Sizing,	$348,650	Straw board (tons),	800
All other stock,	$90,556	Selling value,	$18,808
Fuel,	$1,035,131	All other boards (tons),	8,620
Rent of power and heat,	$219,080	Selling value,	$511,682
Mill supplies,	$314,058	Tissue paper (tons),	2,479
All other materials,	$570,636	Selling value,	$416,440
Freight,	$235,031	Blotting paper (tons),	788
		Selling value,	$111,627
		Building, roofing, asbestos, and sheathing paper (tons),	14,372
		Selling value,	$615,038
		Carpet-lining paper (tons),	4,425
		Selling value,	$141,499

Paper and Pulp Mills — Concluded.

Classification.	1900	Classification.	1900
Value of goods made and work done — Con.		Machinery — Con.	
Hanging paper (tons),	2,264	Cylinder paper machines,	50
Selling value,	$143,080	Total width (inches),	3,084
Miscellaneous paper (tons),	1,427	Wet machines,	34
Selling value,	$85,025	Beating engines,	630
Ground wood pulp made for own use (tons),	13,010	Capacity (pounds),	635,500
Made to sell as such (tons),	100	Washing engines,	294
Selling value,	$2,000	Capacity (pounds),	319,800
Soda fiber made to sell as such (tons),	1,771	Jordan or refining engines,	174
Selling value,	$70,840	Digestors,	21
Sulphite fiber made for own use (tons),	3,014	Total capacity (tons),	34
Made to sell as such (tons),	7,069	Boilers used for digestors,	17
Selling value,	$353,832	Horse power,	1,975
All other products,	$165,557	Cooks per week,	201
Machinery:		Grinders (wood-pulp),	42
Fourdrinier paper machines,	152	Yearly capacity of mills:	
Total width (inches),	11,932	In paper (tons),	238,576
		In pulp (tons),	31,920
		Total horse power,	82,893

The next presentation covers the returns made by the 68 establishments engaged in the manufacture of gas, taken also from the Bulletin issued by the United States Census Office.

Gas and Residual Products.

Classification.	1900	Classification.	1900
Number of establishments,	68	Capital invested — Con.	
Value of bonds,	$1,983,900	Cash on hand, surplus, reserve fund (invested or otherwise), bills and unsettled ledger accounts receivable, and sundries not included in any of the foregoing items,	$2,319,542
Interest paid during the year,	$90,414		
Value capital stock issued,	$16,535,891		
Preferred,	$21,800		
Common,	$16,514,091		
Dividends paid during year,	$1,449,546		
Capital invested,	$30,032,578	Salaried officers, clerks, etc.,	434
Land,	$3,591,388	Total salaries paid,	$420,085
Buildings,	$6,621,853	Male salaried persons,	374
Machinery and gas-making apparatus, holders, mains, meters, teams, tools, horses, wagons, and other accessories,	$16,941,434	Salaries paid,	$389,909
		Female salaried persons,	60
		Salaries paid,	$30,176
Raw materials and finished products on hand, including by-products,	$558,361	Average number of wage earners,	1,409
		Total wages paid,	$813,459
		Males (16 years and over),	1,406
		Wages paid,	$811,587

Gas and Residual Products — Concluded.

Classification.	1900	Classification.	1900
Females (16 years and over),	3	Miscellaneous expenses — Con.	
Wages paid,	$1,872	Rent of offices,	$36,329
Greatest number of persons employed during the year,	1,931	Taxes, including royalty and special tax,	$315,907
Smallest number,	1,351	Lamps and appliances purchased for sale,	$41,377
Value of stock and materials used,	$1,651,873	Insurance, repairs, interest, freight, advertising, and all others not mentioned,	$753,552
For gas making,	$1,482,700		
Coal (tons),	224,726	Value of products,	$5,868,864
Cost value,	$790,783	Gas sold (cubic feet),	4,673,442,791
Coke (bushels),	741,022	Selling value,	$5,356,301
Cost value,	$44,376	Average value per 1,000 cubic feet,	$1.146
Oil (gallons),	17,148,844	All other products including coke, tar, etc.,	$381,108
Cost value,	$630,647	Receipts from rents and sales of appliances,	$131,455
Water (gallons),	36,249,986		
Cost value,	$16,894	Total horse power,	4,217
Cost of fuel for boilers and retorts,	$82,584	Steam engines,	150
Cost of mill supplies,	$7,415	Horse power,	4,212
Cost of all other materials including purification supplies,	$37,944	Electric motors,	1
Freight,	$41,230	Horse power,	5
Miscellaneous expenses,	$1,147,205		
Rent of works,	$40		

In the following table is given, in as far as possible, a comparison between the years 1895 and 1900 for the manufacture of malt, distilled, and fermented liquors. In the United States Bulletin the value of product is given as $12,132,394; this we have increased by the addition of $1,224,602, the internal revenue tax on 1,360,669 gallons of distilled liquors, which was omitted by the Census Office, but which should be added in order to secure the actual selling value of the liquor distilled.

Liquors: Malt, Distilled, and Fermented.

Classification.	1895	1900
Number of establishments,	210	54
Private firms,	184	23
Corporations,	*26	31
Amount of capital invested,†	$11,366,858	$18,724,197
Land,	$1,577,114	$2,148,976
Buildings,	$4,616,499	$6,352,823

* Includes 3 industrial combinations.

† See pages 132 and 133, *ante*.

Liquors: Malt, Distilled, and Fermented— Concluded.

Classification.	1895	1900
Amount of capital invested — Con.		
Machinery, tools, etc.,	$3,276,224	$4,501,947
Cash and sundries,	$1,897,021	$5,720,451
Value of stock and materials used,	$5,192,492	$3,157,255
Value of goods made and work done,	$13,786,255	$13,356,996
Ale, lager, beer, and porter,	$8,661,524	$11,175,068
Rum,	$2,245,927	$2,071,777
Other goods made,	$2,878,804	$110,151
Persons employed:		
Average number,	2,134	1,685
Smallest number,	1,884	1,581
Greatest number,	2,546	1,807
Total wages paid during the year,	$1,387,456	$1,365,032
Number of salaried persons,	275	340
Total amount paid in salaries,	$553,578	$660,205
Machinery:		
Steam engines,	164	158
Horse power,	4,744½	6,967
Water wheels,	27	1
Horse power,	350¾	25
Electric motors,	17	15
Horse power,	111¼	150

Included in the returns for 1895 were a number of establishments manufacturing cider and engaged in bottling which are not included in the returns for 1900.* Their omission accounts for the apparent loss in the number of establishments as well as for the loss shown in the number of water wheels.

The following table presents the data for establishments manufacturing malt liquors in 1900:

Malt Liquors.

Classification.	1900	Classification.	1900
Number of establishments,	40	Value of stock and materials used,	$2,843,050
Private firms,	10	Malt (bushels),	2,299,215
Corporations,	30	Cost value,	$1,395,624
Amount of capital invested,	$18,136,623	Corn, partly manufactured (pounds),	14,388,968
Land,	$2,074,101	Cost value,	$165,114
Buildings,	$6,226,373	Hops (pounds),	2,457,654
Machinery, tools, etc.,	$4,421,247	Cost value,	$367,019
Cash and sundries,	$5,414,902		

* Value of bottling done in 1900, $4,384,037.

Malt Liquors — Concluded.

Classification.	1900	Classification.	1900
Value of stock and materials used — Con.		Total salaries paid,	$639,025
All other materials,	$590,732	Officers of corporations,	$193,597
Fuel,	$220,071	Superintendents, clerks, etc.,	$445,428
Mill supplies,	$22,123	Males,	$442,356
Freight,	$82,367	Females,	$3,072
Value of goods made and work done,	$11,255,613	Persons employed:	
Ale, beer, and porter,	$11,175,068	Average number,	1,651
All other products,	$80,545	Males,	1,641
Barrels of 31 gallons each of ale, beer, and porter made,	1,731,608	Females,	10
Miscellaneous expenses,	$4,731,540	Smallest number,	1,544
Rent,	$324	Greatest number,	1,767
Taxes (not internal revenue),	$115,875	Total wages paid,	$1,340,412
Interest, insurance, etc.,	$4,614,343	Males,	$1,336,427
Contract work,	$998	Females,	$3,985
Number of salaried persons,	322	Machinery:	
Officers of corporations,	45	Steam engines,	152
Superintendents, clerks, etc.,	277	Horse power,	6,719
Males,	271	Electric motors,	15
Females,	6	Horse power,	150

The next table relates to the manufacture of distilled liquors, and in order to conform to the practice of this Department, the tax of 90 cents per gallon is added to the value of spirits produced in order to obtain the actual selling value of the goods made.

Distilled Liquors.

Classification.	1900	Classification.	1900
Number of establishments,	8	Value of stock and materials used — Con.	
Private firms,	7	Barley (bushels),	150
Corporations,	1	Cost value,	$82
Amount of capital invested,	$553,874	Fruits (cost value),	$264
Land,	$72,575	Molasses (gallons),	1,843,865
Buildings,	$120,000	Cost value,	$235,493
Machinery, tools, etc.,	$78,500	All other materials,	$37,693
Cash and sundries,	$282,799	Fuel,	$15,435
Value of stock and materials used,	$308,414	Mill supplies,	$522
Corn (bushels),	800	Freight,	$17,985
Cost value,	$400	Value of goods made and work done,	$2,081,697
Rye (bushels),	900	Brandy (gallons),	276
Cost value,	$540	Selling value,	$796

Distilled Liquors — Concluded.

Classification.	1900	Classification.	1900
Value of goods made and work done — Con.		Number of salaried persons-Con.	
Gin (gallons),	6,187	Total salaries paid — Con.	
Selling value,	$7,424	Females,	1
Rum (gallons),	1,354,206	Salaries,	$500
Selling value,	$2,071,777		
All other products,	$1,700	Persons employed:	
		Average number (males),	29
Miscellaneous expenses,	$441,231	Smallest number,	32
Rent,	$3,000	Greatest number,	35
Taxes (not internal revenue),	$6,058		
Interest, insurance, etc.,	$432,173	Total wages paid,	$21,920
		Machinery:	
Number of salaried persons,	18	Steam engines,	5
Total salaries paid,	$21,180	Horse power,	240
Males,	17	Water wheels,	1
Salaries,	$20,680	Horse power,	25

Below are given the data for the manufacture of wine for 1900.

Vinous Liquors.

Classification.	1900	Classification.	1900
Number of establishments,	6	Value of goods made and work done,	$19,685
Amount of capital invested,	$33,700	Still wines (gallons),	12,586
Land,	$2,300	Selling value,	$18,100
Buildings,	$6,450	All other products,	$1,585
Machinery, tools, etc.,	$2,200	Miscellaneous expenses,	$1,589
Cash and sundries,	$22,750	Rent,	$190
		Taxes (not internal revenue),	$184
Value of stock and materials used,	$5,791	Interest, insurance, etc.,	$1,215
Grapes (pounds),	110,200	Average number of persons employed (males),	5
Cost value,	$1,671		
All other materials,	$4,000	Total wages paid,	$2,700
Fuel,	$100	Number of steam engines,	1
Mill supplies,	$2	Horse power,	8
Freight,	$18		

From Census Bulletin No. 175 are taken the statistics for eight establishments engaged in the manufacture of leather gloves and mittens for 1900.

Gloves and Mittens (Leather).

Classification.	1900	Classification.	1900
Number of establishments,	8	Value of goods made and work done—Con.	
Private firms,	6	Women's unlined gloves and mittens (doz. pairs),	23,581
Corporations,	2	Selling value,	$208,732
Amount of capital invested,	$109,150		
Land,	$1,000	Miscellaneous expenses,	$6,938
Buildings,	$5,000	Rent,	$3,690
Machinery, tools, etc.,	$10,615	Taxes,	$476
Cash and sundries,	$92,535	Sundries,	$1,772
		Contract work,	$1,000
Value of stock and materials used,	$123,135		
Deerskins (dozen),	266	Number of superintendents, clerks, etc.,	7
Cost value,	$4,000	Total salaries,	$3,960
Mochas (dozen),	6,345	Males,	4
Cost value,	$68,000	Salaries,	$2,760
Roans (dozen),	3,664	Females,	3
Cost value,	$15,250	Salaries,	$1,200
Kid—imported (dozen),	860		
Cost value,	$10,595	Persons employed:	
Kid—domestic (dozen),	650	Average number,	194
Cost value,	$5,000	Smallest number,	147
All other materials,	$17,775	Greatest number,	229
Fuel,	$400		
Power and heat,	$955	Total wages paid,	$85,410
Mill supplies,	$110	Males (16 years and over),	61
Freight,	$1,050	Wages,	$42,913
		Females (16 years and over),	127
Value of goods made and work done,	$286,210	Wages,	$41,597
Men's lined gloves and mittens (doz. pairs),	2,622	Children (under 16 years),	6
Selling value,	$18,403	Wages,	$900
Unlined (doz. pairs),	8,470		
Selling value,	$59,075	Number of steam engines,	1
		Horse power,	50

In 1895, the manufacture of bicycles and tricycles was included under the head of carriages and wagons. The value of bicycles and parts manufactured in that year was reported as $4,314,896 and the value of bicycle repairing as $162,008, a total of $4,476,904 as against the value reported in 1900 of $2,715,310.*

Bicycles and Tricycles.

Classification.	1900	Classification.	1900
Number of establishments,	25	Amount of capital invested,	$2,646,498
Private firms,	13	Land,	$51,614
Corporations,	12	Buildings,	$444,863

* Value of repairing done in 1900, $1,232,614.

Bicycles and Tricycles— Concluded.

Classification.	1900	Classification.	1900
Amount of capital invested-Con.		Miscellaneous expenses — Con.	
Machinery, tools, etc.,	$908,361	Interest, insurance, etc.,	$96,559
Cash and sundries,	$1,241,660	Contract work,	$50
Value of stock and materials used,	$1,307,900	Number of salaried persons,	139
Materials purchased partly manufactured,	$1,139,814	Total salaries paid,	$117,242
Fuel,	$25,652	Officers of corporations,	9
Power and heat,	$5,801	Salaries,	$23,400
Mill supplies,	$11,323	Superintendents, clerks, etc.,	130
All other materials,	$96,223	Salaries,	$93,842
Freight,	$29,087	Males,	102
Value of goods made and work done,	$2,715,310	Salaries,	$81,947
Chain bicycles,	59,708	Females,	28
Selling value,	$1,522,507	Salaries,	$11,895
Chainless bicycles,	2,841	Persons employed:	
Selling value,	$206,006	Average number,	1,581
Tandems,	339	Smallest number,	936
Selling value,	$53,247	Greatest number,	2,407
Motor bicycles,	27	Total wages paid,	$815,028
Selling value,	$10,700	Males,	1,543
Tricycles,	1	Wages,	$798,504
Selling value,	$724	Females,	38
Automobiles,	3	Wages,	$16,524
Selling value,	$4,143	Machinery:	
All other products,	$917,983	Steam engines,	12
Miscellaneous expenses,	$125,076	Horse power,	983
Rent,	$11,156	Water wheels,	4
Taxes,	$17,311	Horse power,	285
		Electric motors,	7
		Horse power,	109

In 1895, there were 10 establishments returned under the industry classification of Flax, Hemp, and Jute Goods. These establishments returned the amount of capital devoted to production as $2,446,246, the cost value of stock and materials used, $2,028,837, and the value of goods produced as $3,053,777. There were 2,184 persons of both sexes employed to whom $662,947 in wages was paid. The information given below is taken from Census Bulletin No. 168 and covers the returns for this industry for the year ending June 30, 1900.

Flax, Hemp, and Jute Goods.

Classification.	1900	Classification.	1900
Number of establishments,	28	Number of salaried persons,	136
Amount of capital invested,	$10,223,490	Officers of corporations,	25
Land,	$491,974	Superintendents, clerks, etc.,	111
Buildings,	$1,298,786	Males,	95
Machinery, tools, etc.,	$1,839,725	Females,	16
Cash and sundries,	$6,593,005	Total salaries paid,	$203,943
Value of stock and materials used,	$7,539,433	Officers of corporations,	$92,741
Principal materials,	$6,782,696	Superintendents, clerks, etc.,	$111,202
Fuel,	$106,986	Males,	$102,630
Rent of power and heat,	$4,965	Females,	$8,572
Mill supplies,	$278,951	Wage earners:	
All other materials,	$343,642	Greatest number,	5,195
Freight,	$22,193	Smallest number,	4,075
Value of goods made and work done,	$11,388,933	Average number of wage earners,	4,693
Miscellaneous expenses,	$601,542	Males (16 years and over),	2,649
Rent of works,	$7,170	Females (16 years and over),	1,770
Taxes (except internal revenue),	$85,334	Children (under 16 years),	274
Sundries,	$506,884	Total wages paid,	$1,562,862
Contract work,	$2,154	Males (16 years and over),	$1,020,085
		Females (16 years and over),	$490,991
		Children (under 16 years),	$51,786

From the Bulletin relating to silk manufacture we reproduce the figures for the following tables, the first including comparisons for 1895 and 1900:

Silk and Silk Goods.

Classification.	1895	1900
Number of establishments,	17	20
Private firms,	11	9
Corporations,	6	11
Amount of capital invested,*	$2,230,357	$5,649,758
Land,	$140,462	$216,341
Buildings,	$543,716	$756,454
Machinery, tools, etc.,	$546,507	$707,345
Cash and sundries,	$999,672	$3,969,618
Value of stock and materials used,	$2,575,769	$3,823,963
Value of miscellaneous expenses,	–	$382,745
Value of goods made and work done,	$4,041,399	$5,957,532

* See pages 132 and 133, *ante*.

Silk and Silk Goods — Concluded.

Classification.	1895	1900
Persons employed:		
Average number,	2,427	3,110
Smallest number,	2,128	2,953
Greatest number,	2,595	3,465
Total wages paid during the year,	$812,785	$1,110,324
Number of salaried persons,	203	156
Total amount paid in salaries,	$269,836	$227,276
Machinery,		
Steam engines,	19	24
Horse power,	1,457	2,206
Water wheels,	23	28
Horse power,	1,430	2,039
Electric motors,	4	5
Horse power,	130	205

Of the 20 establishments in existence in 1900, the oldest was established in Northampton in 1832 for the manufacture of sewing silk, the latest was established in 1890 and is located at Sandwich, manufacturing silk and mohair braid.

Other information contained in the Bulletin is given in the following table:

Silk and Silk Goods.

Classification.	1900	Classification.	1900
Number of salaried persons,	156	Broad silk weavers,	509
Officers of corporations,	20	Males,	301
Superintendents, clerks, etc.,	136	Females,	208
Males,	115	Ribbon weavers,	40
Females,	21	Females,	40
Total salaries paid,	$227,276	Other weavers,	52
Officers of corporations,	$51,850	Males,	10
Superintendents, clerks, etc.,	$175,426	Females,	34
Males,	$166,772	Children,	8
Females,	$8,654	Spinners, etc.,	1,793
Average number of wage earners,	3,110	Males,	449
Males (16 years and over),	1,102	Females,	1,186
Females (16 years and over),	1,837	Children,	158
Children (under 16 years),	171	Value of stock and materials used,	$3,823,963
Total wages paid,	$1,110,324	Raw silk (pounds),	720,485
Males (16 years and over),	$506,282	Cost value,	$2,898,545
Females (16 years and over),	$562,989	Spun silk (pounds),	40,136
Children (under 16 years),	$41,053	Cost value,	$96,583

Silk and Silk Goods — Continued.

Classification.	1900
Value of stock and materials used — Con.	
Artificial silk (pounds),	170
Cost value,	$420
Waste silk (pounds),	418,355
Cost value,	$177,480
Cotton yarn (pounds),	480,220
Cost value,	$144,520
Mercerized cotton yarn (pounds),	4,708
Cost value,	$3,733
Wool yarn (pounds),	96,867
Cost value,	$69,660
Mohair yarn (pounds),	17,405
Cost value,	$27,832
Other yarn (pounds),	1,971
Cost value,	$12,991
Organzine and tram (pounds),	17,681
Cost value,	$81,010
Fringe and floss (pounds),	675
Cost value,	$3,287
Fuel,	$35,205
Rent of power and heat,	$3,467
Mill supplies,	$78,435
All other materials,	$179,347
Freight,	$11,448
Miscellaneous expenses,	$382,745
Rent of works,	$13,837
Taxes (except internal revenue),	$29,583
Sundry expenses,	$179,306
Contract work,	$160,019
Value of goods made and work done,	$5,957,532
Organzine and tram (pounds),	1,855
Selling value,	$7,765
Spun silk (pounds),	104,000
Selling value,	$270,400
Machine twist (pounds),	269,241
Selling value,	$1,413,004
Sewing, embroidery, and wash silk (pounds),	170,423
Selling value,	$1,246,445
Fringe and floss silk (pounds),	20,964
Selling value,	$147,773
Broad goods: Plain and fancy all silk (yards),	665,153
Selling value,	$766,054
Broad goods: Plain and fancy silk mixed (yards),	2,020,101
Selling value,	$1,437,799

Classification.	1900
Value of goods made and work done — Con.	
Broad goods: Piece dyed silk — mixed (yards),	20,384
Selling value,	$12,434
Ribbons,	$92,000
Embroideries,	$33,533
Fringes and gimps,	$28,087
Braids and bindings,	$388,339
Tailors' trimmings,	$8,124
Ladies' trimmings,	$68,385
Cloak trimmings,	$839
Military trimmings,	$220
Other trimmings,	$6,000
Other products,	$21,053
Tram thrown under contract (pounds),	8,000
Received for contract work,	$9,278
Machinery.	
Number of spindles,	107,312
Organzine first time over,	20,088
Organzine second time over,	9,632
Tram,	1,586
Cleaning or polishing,	467
Doubling,	11,040
Quilling,	1,910
Reeling,	3,524
Spinning and twisting,	36,782
Winding,	22,283
Number of power looms,	1,017
Plain 36 inches or over reed space,	451
Plain under 36 inches reed space,	422
German ribbon,	144
Number of hand looms,	23
Plain under 36 inches reed space,	23
Knitting or crochet machines,	17
Swiss ribbed machines,	14
Beamers,	6
Braiders,	2,876
Chenille,	4
Embroidery,	20
Hand stitched,	5
Gimp mills,	4
Sewing machines,	9
Slide cord machines,	81
Spooling tables,	108
Twist machines,	5
Warping machines,	97

Silk and Silk Goods. — Concluded.

Classification.	1900	Classification.	1900
Machinery — Con.		Skein dyeing — Con.	
Hand warpers,	6	Spun, colors (pounds),	71,151
Other hand machines,	33	Black (pounds),	22,498
		Cotton, colors (pounds),	122,109
Skein dyeing:		Black (pounds),	224,642
Silk, colors (pounds),	263,700	Wool, colors (pounds),	45,658
Black (pounds),	350,083	Black (pounds),	50,949

In 1895, the value of buttons made was included under the industry classification of Buttons and Dress Trimmings, the goods made amounting to $750,506. In the table which follows, we have reproduced from the Census Bulletin No. 172 the facts relating to the manufacture of buttons in Massachusetts:

Buttons.

Classification.	1900	Classification.	1900
Number of establishments,	13	Gross of buttons made — Con.	
		Horn,	410,180
Amount of capital invested,	$626,439	Pearl (fresh-water),	110,000
Land,	$33,800	Pearl (ocean),	10,000
Buildings,	$105,300	Vegetable ivory,	622,000
Machinery, tools, etc.,	$122,669	All other kinds,	115,954
Cash and sundries,	$364,670		
		Miscellaneous expenses,	$27,505
Value of stock and materials used,	$237,835	Rent of works,	$4,176
Principal materials,	$193,278	Taxes (except internal revenue),	$5,392
Fuel,	$7,180	Interest, insurance, etc.,	$17,777
Rent of power and heat,	$1,539	Contract work,	$160
Mill supplies,	$4,705		
All other materials,	$27,403	Number of salaried persons,	19
Freight,	$3,730	Officers of corporations,	4
		Superintendents, clerks, etc.,	15
Value of goods made and work done,	$681,081	Males,	9
Buttons,	$674,655	Females,	6
Cloth,	$231,562		
Composition,	$14,610	Total salaries paid,	$31,164
Horn,	$64,469	Officers of corporations,	$13,900
Pearl (fresh-water),	$31,400	Superintendents, clerks, etc.,	$17,264
Pearl (ocean),	$7,000	Males,	$15,200
Vegetable ivory,	$292,280	Females,	$2,064
All other kinds,	$33,334		
All other products,	$6,426	Wage earners:	
		Greatest number,	871
Gross of buttons made,	2,127,345	Smallest number,	679
Cloth,	534,810		
Composition,	324,401	Average number of wage earners,	772
		Males (16 years and over),	302

Buttons — Concluded.

Classification.	1900	Classification.	1900
Average number of wage earners — Con.		Machinery:	
Females (16 years and over),	443	Steam engines,	8
Children (under 16 years),	27	Horse power,	433
Total wages paid,	$276,202	Water wheels,	1
Males (16 years and over),	$141,049	Horse power,	15
Females (16 years and over),	$131,929	Electric motors,	2
Children (under 16 years),	$3,224	Horse power,	10

Bulletin No. 166 presents data for the shipbuilding industry of the country, and from it we extract the figures for Massachusetts. The first table relates to the building and repairing of iron and steel vessels.

Shipbuilding (Iron and Steel).

Classification.	1900	Classification.	1900
Number of establishments,	3	Value of stock and materials used — Con.	
Private firms,	1	Fittings and furniture purchased,	$7,569
Corporations,	2	Fuel,	$11,700
Amount of capital invested,	$1,010,461	Mill supplies,	$3,365
Land,	$122,500	All other materials,	$33,751
Buildings,	$167,388	Freight,	$2,535
Machinery, tools, etc.,	$445,898	Value of goods made and work done,	$1,296,880
Cash and sundries,	$274,675	Steam vessels,	3
Value of stock and materials used,	$652,966	Gross tonnage,	1,600
Lumber — all kinds (1,000 ft. B. M.),	554	Net tonnage,	950
Cost value,	$14,884	Selling value,	$408,000
Iron and steel plates, beams, angles, forgings, bolts, spikes, rivets, castings, etc. (pounds),	13,800,900	All other products,	$95,000
Cost value,	$482,866	Repairing work done,	$793,880
Cordage — wire (feet),	2,700	Miscellaneous expenses,	$97,982
Cost value,	$400	Taxes (not internal revenue),	$7,904
Cordage — Manila, etc. (pounds),	1,800	Insurance, interest, etc.,	$82,328
Cost value,	$300	Contract work,	$7,750
Duck,	$215	Number of salaried persons,	29
Paints, oils, etc.,	$1,565	Total salaries,	$40,944
Oakum and pitch,	$160	Officers of corporations,	4
Masts and spars purchased,	$60	Salaries,	$12,700
Blocks purchased,	$30	Superintendents, clerks, etc.,	25
Machinery and boilers purchased,	$93,566	Salaries,	$28,244
		Males,	21
		Salaries,	$26,594
		Females,	4
		Salaries,	$1,650

Shipbuilding (Iron and Steel) — Concluded.

Classification.	1900	Classification.	1900
Persons employed:		Total wages paid,	$399,307
Average number,	563	Steam engines,	8
Males,	563	Horse power,	375
Smallest number,	361	Electric motors,	10
Greatest number,	888	Horse power,	130

The next table covers the returns for wooden ship and boat building.

Ship and Boat Building (Wooden).

Classification.	1900	Classification.	1900
Number of establishments,	122	Value of goods made and work done,	$1,760,574
Private firms,	113	Steam vessels,	16
Corporations,	9	Gross tonnage,	1,474
Amount of capital invested,	$1,138,830	Net tonnage,	864
Land,	$221,539	Selling value,	$158,275
Buildings,	$129,878	Sailing vessels,	128
Machinery, tools, etc.,	$201,104	Gross tonnage,	3,889
Cash and sundries,	$586,309	Net tonnage,	2,910
Value of stock and materials used,	$704,439	Selling value,	$384,000
Lumber, logs, timber, etc. (1,000 ft. B. M.),	11,834	Barges,	9
Cost value,	$334,314	Gross tonnage,	2,030
Iron and steel plates, beams, angles, spikes, rivets, castings, etc. (pounds),	3,811,803	Net tonnage,	798
Cost value,	$122,710	Selling value,	$36,800
Anchors and chains purchased,	$7,289	Small boats, row boats, launches, etc.,	3,801
Cordage — wire (feet),	81,150	Selling value,	$208,964
Cost value,	$7,226	All other products,	$162,699
Cordage — Manila, etc. (pounds),	153,376	Repairing work done,	$809,836
Cost value,	$24,131	Miscellaneous expenses,	$133,787
Duck,	$9,247	Rent of works,	$21,453
Paints, oils, etc.,	$23,231	Taxes (not internal revenue),	$6,772
Oakum and pitch,	$12,022	Interest, insurance, etc.,	$40,861
Masts and spars purchased,	$11,468	Contract work,	$64,701
Blocks purchased,	$5,709	Number of salaried persons,	51
Machinery and boilers purchased,	$41,327	Total salaries,	$38,102
Fittings and furniture purchased,	$16,338	Officers of corporations,	12
Fuel,	$10,252	Salaries,	$11,562
Rent of power and heat,	$3,252	Superintendents, clerks, etc.,	39
Mill supplies,	$2,635	Salaries,	$26,540
All other materials,	$65,407	Males,	32
Freight,	$7,881	Salaries,	$23,750
		Females,	7
		Salaries,	$2,790

Ship and Boat Building (Wooden) — Concluded.

Classification.	1900	Classification.	1900
Persons employed:		Steam engines,	34
Average number,	1,043	Horse power,	619
Males,	1,043	Gas or gasoline engines,	2
Smallest number,	637	Horse power,	36
Greatest number,	1,821	Electric motors,	2
Total wages paid,	$636,686	Horse power,	6

The United States Government controlled one establishment in Massachusetts engaged in building small boats and repairing, for which the following are leading points:

Governmental Shipbuilding.

Classification.	1900	Classification.	1900
Number of establishments,	1	Value of goods made and work done,	$1,361,816
Amount of capital,	$13,273,708	Average number of males employed,	1,298
Land,	$8,143,882	Total wages paid,	$902,579
Buildings,	$3,120,390	Steam engines,	21
Machinery, tools, etc.,	$1,636,519	Horse power,	1,582
Cash and sundries,	$372,917	Electric motors,	15
Value of stock and materials used,	$843,795	Horse power,	445

The next table presents statistics for wooden ship and boat building and repairing in certain specified cities of the State.

Ship and Boat Building (Wooden). For Cities.

Classification.	Boston	Gloucester	New Bedford	Quincy	Salem	Waltham
Establishments,	30	24	11	3	3	3
Capital,	$643,760	$145,172	$13,650	$38,805	$5,460	$21,655
Stock and materials used,	$451,779	$74,531	$6,073	$10,925	$3,215	$4,003
Goods made and work done,	$1,120,763	$201,448	$27,925	$16,150	$13,200	$18,900
Miscellaneous expenses,	$102,144	$12,160	$1,699	$806	$398	$2,494
Salaried persons,	26	6	–	2	–	1
Salaries paid,	$20,510	$5,860	–	$2,500	–	$260
Average persons employed,	653	102	22	18	8	9
Wages paid,	$415,417	$62,800	$12,760	$10,360	$6,250	$5,500

In 1900, there were 45 establishments which were engaged exclusively in the manufacture and repair of small boats, including power launches, ships' boats, lifeboats and life rafts, rowboats, and sailboats under 5 tons measurement. They had $208,559 of capital, and the value of the output was $271,114.

There were 16 establishments engaged exclusively in repairing with a capital of $920,707, and they received $1,042,690 for work done. This does not include the plants maintained by transportation companies for the repair of their own vessels. Of the latter, there were two, with a capital of $80,500. The value of the work done by them amounted to $120,200.

Of the small boats built, Massachusetts produced the following: Steam launches, 7; value, $23,850; power launches (other than steam), 41; value, $49,383; sailboats under 5 tons, 2,099; value, $98,242; rowboats, canoes, etc., 1,661; value, $61,339.

In Bulletin No. 189, devoted to the manufacture of cheese, butter, and condensed milk, we find the following figures for Massachusetts:

Cheese, Butter, and Condensed Milk (Factory Product).

Classification.	1900	Classification.	1900
Number of establishments,	50	Value of stock and materials used—Con.	
Private firms,	15	For condensed milk—	
Corporations,	4	Milk (pounds),	324,000
Associations, etc.,	31	Cost value,	$4,320
Amount of capital invested,	$324,382	Cans, labels, etc.,	$500
Land,	$19,945	Fuel,	$9,051
Buildings,	$85,483	Power and heat,	$48
Machinery, tools, etc.,	$76,854	Mill supplies,	$1,777
Cash and sundries,	$142,100	Freight,	$3,787
Value of stock and materials used,	$1,024,575	Value of goods made and work done,	$1,198,159
For butter—		Butter—	
Milk bought or received from patrons (pounds),	24,096,955	Packed solid (pounds),	1,888,570
Cost value,	$218,027	Selling value,	$448,304
Gathered cream (pounds),	15,709,294	Prints or rolls (pounds),	2,703,349
Cost value,	$746,985	Selling value,	$637,199
Tubs, boxes, color, salt, etc.,	$20,017	Cream sold (gallons),	86,849
For cheese—		Selling value,	$58,461
Milk bought or received from patrons (pounds),	2,761,420	Skimmed milk sold, fed, or returned to patrons (pounds),	3,221,968
Cost value,	$19,433	Selling value,	$8,690
Boxes, salt, etc.,	$630		

Cheese, Butter, and Condensed Milk (Factory Product) — Concluded.

Classification.	1900	Classification.	1900
Value of goods made and work done — Con.		Number of salaried persons — Con.	
Casein dried — from skimmed milk (pounds),	152,267	Officers of corporations,	4
Selling value,	$7,613	Salaries,	$1,925
All other creamery products,	$6,673	Superintendents, clerks, etc.,	20
Standard factory cheese — cheddar (pounds),	238,542	Salaries,	$10,588
Selling value,	$23,539	Males,	19
Other cheese (pounds),	12,000	Salaries,	$10,438
Selling value,	$1,200	Females,	1
Condensed milk (pounds),	108,000	Salaries,	$150
Selling value,	$6,480	Persons employed:	
Miscellaneous expenses,	$15,240	Average number,	99
Rent of works,	$3,974	Males,	99
Taxes (not internal revenue),	$1,916	Smallest number,	100*
Interest, insurance, etc.,	$8,520	Greatest number,	112
Contract work,	$830	Total wages paid,	$61,636
Number of salaried persons,	24	Steam engines,	45
Total salaries,	$12,513	Horse power,	435
		Water wheels,	1
		Horse power,	10

* As printed in Bulletin; evidently an error.

From Bulletin No. 191 we collate the data for the manufacture of needles in the following table:

Needles.

Classification.	1900	Classification.	1900
Number of establishments,	6	Value of goods made and work done — Con.	
Private firms,	5	Knitting-machine latch (gross),	13,888
Corporations,	1	Selling value,	$16,000
Amount of capital invested,	$245,168	Common household dry-thread sewing machine (gross),	162,052
Land,	$5,000	Selling value,	$186,744
Buildings,	$25,000	Wax-sewing machine (gross),	4,173
Machinery, tools, etc.,	$47,599	Selling value,	$19,397
Cash and sundries,	$167,569	All other products,	$1,710
Value of stock and materials used,	$26,565	Miscellaneous expenses,	$9,394
Partly manufactured,	$16,745	Rent of works,	$1,025
Fuel,	$2,660	Taxes (not internal revenue),	$1,679
Power and heat,	$350	Interest, insurance, etc.,	$6,690
Mill supplies,	$4,747	Number of salaried persons,	8
All other materials,	$1,744	Total salaries,	$8,300
Freight,	$319	Officers of corporations,	1
Value of goods made and work done,	$223,851	Salaries,	$1,400
Needles, all kinds (gross),	180,113		
Total selling value,	$222,141		

Needles — Concluded.

Classification.	1900	Classification.	1900
Number of salaried persons — Con.		Persons employed — Con.	
Superintendents, clerks, etc.,	7	Smallest number,	255
Salaries,	$6,900	Greatest number,	270
Males,	6	Total wages paid,	$102,757
Salaries,	$6,400	Males,	$71,169
Females,	1	Females,	$26,205
Salaries,	$500	Children,	$5,383
Persons employed:		Number of steam engines,	2
Average number,	262	Horse power,	89
Males (16 years and over),	132	Gas or gasoline engines,	1
Females (16 years and over),	99	Horse power,	15
Children (under 16 years),	31	Electric motors,	1
		Horse power,	30

Bulletin No. 194 is devoted to the manufacture of clay products, and from it we select the statistics relating to establishments manufacturing brick and tile exclusively, and present them in the next table. The figures, while credited to the year ending June 30, 1900, are for the calendar year ending December 31, 1899.

Brick and Tile.

Classification.	1900*	Classification.	1900*
Number of establishments,	81	Value of stock and materials used — Con.	
Private firms,	72	Fuel,	$302,294
Corporations,	9	Mill supplies,	$4,885
Amount of capital invested,	$2,318,664	All other materials,	$29,289
Land,	$669,263	Freight,	$14,603
Buildings,	$381,134	Value of goods made and work done,	$1,468,264
Machinery, tools, etc.,	$431,218	Common brick (1,000),	230,207
Cash and sundries,	$837,049	Selling value,	$1,255,434
Value of stock and materials used,	$400,365	Red-front brick — both pressed and wire cut (1,000),	2,250
Clay purchased (tons),	44,905	Selling value,	$31,200
Cost value,	$34,905	Fancy colored front brick — not red (1,000),	10,000
Coal, used as an ingredient (tons),	2,668	Selling value,	$80
Cost value,	$4,980	Ornamental-shaped brick (1,000),	2,710
Sand (tons),	15,644	Selling value,	$131,550
Cost value,	$8,819	All other products,	$50,000
Iron (pounds),	200,000		
Cost value,	$300		
Coloring matter,	$290		

* The report for the Twelfth Census is for the year ending December 31, 1899.

Brick and Tile — Concluded.

Classification.	1900	Classification.	1900
Miscellaneous expenses,	$90,672	Total wages paid,	$622,311
Rent of works,	$16,532	Males,	$621,661
Taxes (not internal revenue),	$18,564	Children,	$650
Interest, insurance, etc.,	$52,826	Steam engines,	73
Contract work,	$2,750	Horse power,	3,833
		Water wheels,	1
Number of salaried persons,	54	Horse power,	25
Total salaries,	$44,205	Clay-grinding machines:	
Officers of corporations,	6	Disintegrators,	39
Salaries,	$8,450	Dry pans,	1
Superintendents, clerks, etc.,	48	All other,	38
Salaries,	$35,755	Clay-tempering machines:	
Males,	47	Ring pits,	8
Salaries,	$35,580	Pug mills,	58
Females,	1	Wet pans,	2
Salaries,	$175	All other,	9
		Molding machines:	
Persons employed:		Soft mud,	76
Average number,	1,429	Stiff mud,	10
Males (16 years and over),	1,426	Shape-brick power presses,	1
Children (under 16 years),	3	Hand presses,	25
Smallest number,	1,049	Mold sanders,	93
Greatest number,	2,800	Dryers,	130

The following table shows the facts for the 29 establishments engaged principally in manufacturing pottery and terra cotta products, but in which some brick and tile are also produced.

Pottery, Terra Cotta, and Fire Clay Products.

Classification.	1900*	Classification.	1900*
Number of establishments,	29	Value of stock and materials used — Con.	
Private firms,	20	Foreign ball clay (tons),	242
Corporations,	9	Cost value,	$2,546
		Stoneware clay (tons),	1,515
Amount of capital invested,	$1,627,575	Cost value,	$3,969
Land,	$370,880	Slip clay (tons),	83
Buildings,	$522,942	Cost value,	$412
Machinery, tools, etc.,	$197,273	Fire clay (tons),	11,678
Cash and sundries,	$536,480	Cost value,	$20,223
		Terra-cotta clay (tons),	335
Value of stock and materials used,	$188,278	Cost value,	$825
Domestic china clay (tons),	682	Brick clay — purchased (tons),	3,347
Cost value,	$4,479	Cost value,	$6,958
Domestic ball clay (tons),	250	All other clay (tons),	60
Cost value,	$1,500	Cost value,	$60

* The report for the Twelfth Census is for the year ending December 31, 1899.

Pottery, Terra Cotta, and Fire Clay Products — Continued.

Classification.	1900
Value of stock and materials used — Con.	
Coal, used as an ingredient (tons),	700
Cost value,	$1,500
Sand (tons),	1,561
Cost value,	$2,470
Manganese (pounds),	25,061
Cost value,	$396
Salt (tons),	20
Cost value,	$148
Coloring matter,	$1,026
Carbonate of barium,	$1,175
Flint, quartz (tons),	222
Cost value,	$2,207
Feldspar (tons),	239
Cost value,	$2,767
Plaster (tons),	240
Cost value,	$2,443
Oxide of lead, zinc, and cobalt,	$729
Crates, boxes, barrels, etc.,	$14,840
Fuel,	$58,774
Power and heat,	$545
Mill supplies,	$3,711
All other materials,	$37,467
Freight,	$17,108
Value of goods made and work done,	$713,246
Pottery (total selling value),	$293,833
Red earthenware,	$163,231
Stoneware (capacity in gals.),	583,916
Selling value,	$35,435
Art pottery and porcelain,	$25,607
All other pottery products,	$69,560
Terra cotta, fire, and other clay products (total selling value),	$406,499
Architectural terra cotta,	$52,224
Fireproofing — including terra-cotta lumber, and hollow building tile or blocks (tons),	11,321
Selling value,	$70,573
Fire brick,	763,000
Selling value,	$22,792
Furnace linings and settings,	$26,154
Locomotive tiles and tank blocks,	$20,750
Stove linings,	$143,547
Drain tile,	$824

Classification.	1900
Value of goods made and work done — Con.	
Terra cotta, fire, and other clay products (total selling value) — Con.	
Ornamental-shaped brick,	70,000
Selling value,	$3,800
Fancy colored front brick,	1,450,000
Selling value,	$48,000
Common brick,	230,000
Selling value,	$1,333
All other terra cotta, fire, and other clay products,	$16,502
All other products,	$12,914
Miscellaneous expenses,	$76,266
Rent of works,	$2,509
Taxes (not internal revenue),	$9,531
Interest, insurance, etc.,	$58,850
Contract work,	$5,376
Number of salaried persons,	72
Total salaries,	$60,360
Officers of corporations,	9
Salaries,	$11,400
Superintendents, clerks, etc.,	63
Salaries,	$48,960
Males,	57
Salaries,	$45,683
Females,	6
Salaries,	$3,277
Persons employed:	
Average number,	584
Males (16 years and over),	526
Females (16 years and over),	54
Children (under 16 years),	4
Smallest number,	572
Greatest number,	758
Total wages paid,	$262,141
Males,	$246,136
Females,	$15,064
Children,	$941
Machinery and kilns:	
Steam engines,	29
Horse power,	1,196
Gas or gasoline engines,	1
Horse power,	13
Electric motors,	2
Horse power,	20
Disintegrators (blunger),	2
Slip pumps,	4

Pottery, Terra Cotta, and Fire Clay Products — Concluded.

Classification.	1900	Classification.	1900
Machinery and kilns — Con.		Machinery and kilns — Con.	
Lawns,	16	Clay-grinding machines - Con.	
Clay presses — iron,	1	Dry pans,	8
Clay presses — wood,	1	All other,	2
Pug mills — regular,	14	Clay-tempering machines:	
Pug mills — sagger,	2	Ring pits,	7
Wad mills,	3	Pug mills,	9
Jiggers,	42	Wet pans,	3
Lathes,	14	Molding machines:	
All other machines,	20	Stiff mud,	6
Up-draft kilns,	29	Dry presses,	1
Down-draft kilns,	31	Shape-brick power presses,	3
Clamp kilns,	2	Hand presses,	18
Muffle kilns,	8	Sewer-pipe presses,	2
Decorating muffle kilns,	2	Tile machines,	4
All other kilns,	12	All other,	4
Clay-grinding machines:		Dryers,	43
Disintegrators,	6	Idle machinery,	4

Massachusetts ranks ninth in the value of clay products in the United States, producing goods to the value of $2,181,510, or 2.28 per cent of the total.

Aggregating the preceding tables for 1900 and combining for comparison the industries Brick, Tiles, and Sewer Pipe and Earthen, Plaster, and Stone Ware for 1895, we secure the following:

Total Clay Products.

Classification.	1895	1900
Number of establishments,	120	110
Amount of capital invested,*	$2,907,886	$3,946,239
Value of stock and materials used,	$627,851	$588,643
Value of goods made and work done,	$2,317,540	$2,181,510
Miscellaneous expenses,	–	$166,938
Number of salaried officials, clerks, etc.,	100	126
Total salaries paid,	$114,114	$104,565
Average number of persons employed,	2,047	2,013
Total wages paid,	$907,619	$884,452

* See pp. 132, 133, *ante*.

In the following table is shown in detail the value of the combined products in 1900, in some instances quantities also being given:

Kinds of Clay Products.

Classification.	1900	Classification.	1900
Aggregate Value.	$2,181,510	*Aggregate Value*—Con.	
Common brick,	230,437,000	Hollow brick, fireproofing, and terra-cotta lumber,	$70,573
Selling value,	$1,256,767	Architectural terra cotta,	$52,224
Pressed brick,	2,250,000	All other brick, tile, and terra-cotta products,	$214,766
Selling value,	$31,200	Stoneware,	$35,435
Fancy colored brick,	1,460,000	Art pottery and porcelain,	$25,607
Selling value,	$48,080	Red earthenware,	$163,231
Drain tile,	$824	All other pottery products,	$69,560
Stove linings,	$143,547		
Furnace fittings,	$46,904		
Fire brick,	$22,792		

From Bulletin No. 195, devoted to Leather, we secure the following table:

Leather: Tanned, Curried, and Finished.

Classification.	1900	Classification.	1900
Number of establishments,	119	Value of stock and materials used—Con.	
Private firms,	98	Gambier (bales),	15,469
Corporations,	21	Cost value,	$106,299
Amount of capital invested,	$15,317,940	Hemlock bark extract (bbls.),	3,688
Land,	$360,099	Cost value,	$45,683
Buildings,	$1,339,948	Oak bark extract (bbls.),	13,467
Machinery, tools, etc.,	$1,745,968	Cost value,	$124,510
Cash and sundries,	$11,871,925	Quebracho (bbls. or bales),	509
Value of stock and materials used,	$19,793,757	Cost value,	$7,884
Hides, all kinds,	1,029,535	Sumac (tons),	3,613
Cost value,	$4,703,949	Cost value,	$190,579
Calf and kip skins,	2,229,559	Chemicals,	$307,045
Cost value,	$2,705,877	All other tanning materials,	$300,328
Goatskins,	9,725,120	Rough leather (sides),	338,991
Cost value,	$4,708,971	Cost value,	$1,051,403
Sheepskins,	7,529,451	Rough grains (sides),	12,578
Cost value,	$2,290,309	Cost value,	$31,704
All other skins,	47,946	Rough splits (sides),	1,550,723
Cost value,	$41,963	Cost value,	$1,056,670
Hemlock bark (cords),	61,971	All other rough leather (sides),	980,544
Cost value,	$498,184	Cost value,	$352,284
Oak bark (cords),	1,070	Oil, stearin, degras, tallow, and all other materials used in currying,	$735,785
Cost value,	$8,817		

Leather: Tanned, Curried, and Finished — Concluded.

Classification.	1900
Value of stock and materials used — Con.	
Fuel,	$219,397
Rent of power and heat,	$9,819
Mill supplies,	$27,620
All other materials,	$80,502
Freight,	$188,175
Value of goods made and work done,	$26,067,714
Rough leather (sides),	24,119
Selling value,	$41,151
Rough grains (sides),	59,242
Selling value,	$82,938
Rough splits (sides),	171,528
Selling value,	$169,345
Union sole leather (sides),	60,000
Selling value,	$245,000
Hemlock sole leather (sides),	9,980
Selling value,	$22,500
Upper leather — grain, satin, kangaroo, etc., side leather (sides),	1,859,287
Selling value,	$4,361,481
Finished splits,	3,581,012
Selling value,	$2,852,551
Patent and enameled (sides),	18,650
Selling value,	$61,054
Flesh finished calf and kip skins,	6,335
Selling value,	$7,395
Grain finished calf and kip skins,	2,241,919
Selling value,	$4,009,829
Goatskins, black, tanned and finished,	5,001,784
Selling value,	$3,427,021
Goatskins, colored, tanned and finished,	3,954,334
Selling value,	$2,585,184
Sheepskins, tanned and finished,	8,590,563
Selling value,	$3,636,839
Belting leather (sides),	226,443
Selling value,	$945,723
Harness leather (sides),	4,600
Selling value,	$14,800
Trunk, bag, and pocketbook leather,	$316,646
Bookbinders' leather,	$194,456
Leather for manufacture of gloves,	$13,350

Classification.	1900
Value of goods made and work done — Con.	
Furniture leather (hides),	6,960
Selling value,	$48,723
All other leather,	$957,817
All other products, including by-products, offal, etc.,	$992,728
Custom work —	
Hides tanned,	84,500
Skins tanned,	6,388,588
Sides curried,	512,965
Splits curried,	182,160
Skins curried,	299,147
Amount received for custom tanning and currying,	$1,081,183
Miscellaneous expenses,	$662,553
Rent of works,	$73,299
Taxes (not internal revenue),	$88,961
Interest, insurance, etc.,	$500,293
Number of salaried persons,	355
Total salaries,	$405,648
Officers of corporations,	27
Salaries,	$82,764
Superintendents, clerks, etc.,	328
Salaries,	$322,884
Males,	289
Salaries,	$304,341
Females,	39
Salaries,	$18,543
Persons employed:	
Average number,	7,010
Males (16 years and over),	6,955
Females (16 years and over),	48
Children (under 16 years),	7
Smallest number,	5,846
Greatest number,	8,604
Total wages paid,	$3,379,698
Males,	$3,358,807
Females,	$19,307
Children,	$1,584
Steam engines,	138
Horse power,	10,935
Gas and gasoline engines,	1
Horse power,	2
Water wheels,	5
Horse power,	126
Electric motors,	1
Horse power,	10

In Massachusetts there were, in 1900, 119 establishments producing different kinds of leather as follows: sole, 1; rough, 2; upper, 21; goat, kid, and morocco, 31; patent and enameled, 1; sheepskins, 13; belting leather, 4; harness and carriage, 2; trunk, glove, bookbinding, and furniture, 4; and all other kinds, 40.

From Bulletin No. 197, we reproduce the following data relative to the manufacture of cigars and cigarettes:

Cigars and Cigarettes.

Classification.	1900	Classification.	1900
Number of establishments,	331	Number of salaried persons,	133
Private firms,	322	Total salaries,	$153,576
Corporations,	9	Officers of corporations,	9
		Salaries,	$15,560
Amount of capital invested,	$2,358,501	Superintendents, clerks, etc.,	124
Land,	$122,970	Salaries,	$138,016
Buildings,	$118,950	Males,	112
Machinery, tools, etc.,	91,971	Salaries,	$131,880
Cash and sundries,	$2,024,610	Females,	12
		Salaries,	$6,136
Value of stock and materials used,	$1,910,617	Persons employed:	
Principal materials,	$1,887,078	Average number,	2,752
Fuel,	$11,625	Males (16 years and over),	2,038
Rent of power and heat,	$812	Females (16 years and over),	700
Mill supplies,	$125	Children (under 16 years),	14
Freight,	$10,977	Smallest number,	2,332
		Greatest number,	3,362
Value of goods made and work done,	$5,298,390	Total wages paid,	$1,749,676
		Males,	$1,443,830
Miscellaneous expenses,	$594,410	Females,	$302,755
Rent of works,	$68,905	Children,	$3,091
Taxes (not internal revenue),	$12,500		
Insurance, interest, etc.,	$512,981	Steam engines,	4
Contract work,	$24	Horse power,	22

From the same bulletin, we find that in 1840 there were grown in Massachusetts 64,955 pounds of tobacco. This was more than doubled in 1850, the number of pounds grown being 138,246. In 1860, it rose to 3,233,198 pounds and in 1870 to 7,312,885 pounds, falling in 1880 to 5,369,436 pounds, and in 1890 to 2,794,848 pounds. In 1900, however, the quantity rose to 6,406,570 pounds.

According to the report of the Commissioner of Internal Revenue there were 2,842,087 pounds of tobacco used in 1900,

and the production in that year of cigars and cigarettes was 135,630,310, distributed as follows: Cigars, weighing more than three pounds per thousand, 127,679,825; cigars, weighing not more than three pounds per thousand, 738,200; cigarettes, weighing more than three pounds per thousand, 52,860; and cigarettes, weighing not more than three pounds per thousand, 7,159,425.

There were 2 establishments engaged in the manufacture of smoking tobacco and snuff, and during 1900 they used 121,613 pounds of leaf tobacco, 18,038 pounds of scraps, 2,262 pounds of stems, and 11,284 pounds of other materials. The product was 19,268 pounds of smoking tobacco and 112,804 pounds of snuff.

From Bulletin No. 198, devoted to starch, we select the following data for Massachusetts.

Starch.

Classification.	1900	Classification.	1900
Number of establishments,	5	Miscellaneous expenses,	$28,708
Private firms,	3	Rent of works,	$300
Corporations,	2	Taxes (not internal revenue),	$1,996
		Insurance, interest, etc.,	$26,412
Amount of capital invested,	$344,999		
Land,	$29,320	Number of salaried persons,	21
Buildings,	$67,300	Total salaries,	$23,788
Machinery, tools, etc.,	$53,271	Officers of corporations,	5
Cash and sundries,	$195,108	Salaries,	$8,200
		Superintendents, clerks, etc.,	16
Value of stock and materials used,	$259,652	Salaries,	$15,588
Corn starch (pounds),	380,000	Males,	14
Cost value,	$6,000	Salaries,	$14,948
Wheat flour (pounds),	13,939,464	Females,	2
Cost value,	$237,654	Salaries,	$640
Borax (pounds),	10,000		
Cost value,	$700	Persons employed:	
Soda (pounds),	43,478	Average number,	65
Cost value,	$500	Males (16 years and over),	58
Fuel,	$7,089	Females (16 years and over),	7
Mill supplies,	$1,040	Smallest number,	59
All other materials,	$6,669	Greatest number,	73
Value of goods made and work done,	$390,161	Total wages paid,	$34,736
Corn starch (pounds),	585,960	Males,	$32,736
Selling value,	$46,391	Females,	$2,000
Wheat starch (pounds),	7,456,191		
Selling value,	$343,424	Steam engines,	4
All other products,	$346	Horse power,	65

From Bulletin No. 199, we find that in 1900 there were in Massachusetts 231 establishments engaged in producing flour, meal, feed, etc., the figures for this industry being presented in the following table:

Flouring and Grist Mills.

Classification.	1900	Classification.	1900
Number of establishments,	231	Value of goods made and work done—Con.	
Private firms,	223	Barley meal (pounds),	252,457
Corporations,	8	Selling value,	$13,900
Amount of capital invested,	$1,930,927	Corn meal (barrels),	2,443,998
Land,	$203,518	Selling value,	$4,477,134
Buildings,	$401,901	Hominy (pounds),	2,564,600
Machinery, tools, etc.,	$340,838	Selling value,	$23,134
Cash and sundries,	$984,670	Feed (pounds),	106,739,202
Value of stock and materials used,	$4,812,256	Selling value,	$1,047,932
Wheat (bushels),	27,340	Offal (pounds),	19,267,731
Cost value,	$20,376	Selling value,	$101,888
Corn (bushels),	9,718,561	Custom sawing,	$6,914
Cost value,	$4,094,552	All other products,	$34,597
Rye (bushels),	287,972	Amount received for custom grinding, including value of grain received as toll,	$87,208
Cost value,	$147,823		
Buckwheat (bushels),	13,849	Miscellaneous expenses,	$95,774
Cost value,	$8,180	Rent of works,	$28,094
Barley (bushels),	80,940	Taxes (not internal revenue),	$15,107
Cost value,	$30,277	Interest, insurance, etc.,	$52,573
Oats (bushels),	1,381,703	Number of salaried persons,	53
Cost value,	$378,575	Total salaries,	$33,157
Other grain (bushels),	82,726	Officers of corporations,	4
Cost value,	$36,170	Salaries,	$5,600
Barrels purchased,	3,810	Superintendents, clerks, etc.,	49
Cost value,	$736	Salaries,	$27,557
Sacks purchased,	433,230	Males,	33
Cost value,	$13,370	Salaries,	$22,043
Cooperage stock and cloth for sacks,	$50	Females,	16
Fuel,	$24,896	Salaries,	$5,514
Rent of power and heat,	$10,251	Persons employed:	
Mill supplies,	$9,526	Average number,	304
All other materials,	$8,108	Males (16 years and over),	302
Freight,	$29,366	Children (under 16 years),	2
Value of goods made and work done,	$5,763,523	Smallest number,	311
Wheat flour (barrels),	7,328	Greatest number,	384
Selling value,	$27,744	Total wages paid,	$161,486
Rye flour (barrels),	5,750	Males,	$161,264
Selling value,	$19,398	Children,	$222
Buckwheat flour (lbs.),	428,143	Steam engines,	61
Selling value,	$10,882	Horse power,	2,376

Flouring and Grist Mills — Concluded.

Classification.	1900	Classification.	1900
Gas or gasoline engines,	17	Number of pairs of rolls,	81
Horse power,	362	Number of runs of stone,	348
Water wheels,	229	Estimated maximum capacity per day of 24 hours (bushels),	166,825
Horse power,	6,464		
Other power engines,	1		
Horse power,	4		

Bulletin No. 200 is devoted to the manufacture of agricultural implements, the figures for Massachusetts given in the next table being derived therefrom.

Agricultural Implements.

Classification.	1900	Classification.	1900
Number of establishments,	9	Kinds and quantity of goods made — Con.	
Private firms,	6	Hoes (dozen),	9,104
Corporations,	3	Markers and furrowers,	80
Amount of capital invested,	$706,472	Plows —	
Land,	$16,700	Shovel,	200
Buildings,	$37,300	Sulky or wheel,	140
Machinery, tools, etc.,	$122,733	Walking,	17,510
Cash and sundries,	$529,739	Potato coverers and hillers,	150
Value of stock and materials used,	$216,313	Rollers,	300
Purchased in raw state,	$566	Stalk cutters,	237
Partially manufactured,	$186,458	Corn planters, horse	929
Fuel,	$7,142	Line spreaders,	125
Rent of power and heat,	$40	Manure spreaders,	25
Mill supplies,	$1,895	Seed sowers,	3,000
All other materials,	$20,200	Hay rakes, hand (dozen)	3,039
Freight,	$12	Hay rakes, horse	1,125
Value of goods made and work done,	$534,789	Hay tedders,	562
Goods made,	$502,565	Mowers,	3,700
Work done,	$32,224	Potato diggers,	10
Kinds and quantity of goods made:		Corn shellers, hand	929
Cultivators —		Fanning mills,	110
Small,	400	Miscellaneous seed separators,	6,531
Wheeled,	630	Carts,	250
Harrows —		Churns, butter workers, etc.,	250
Disk,	325	Cider and wine mills,	75
Other than disk,	1,015	Ensilage cutters,	1,287
		Hay cutters,	400
		Feed and ensilage elevators,	100
		Fruit presses,	300
		Gardening implements,	2,000
		Grinding mills,	2,500
		Grubbing machines,	354

Agricultural Implements — Concluded.

Classification.	1900	Classification.	1900
Kinds and quantity of goods made — Con.		Number of salaried persons–Con.	
Handcarts,	510	Superintendents, clerks, etc., (males),	33
Horsepowers,	10	Salaries,	$33,358
Portable sawmills,	20	Persons employed:	
Road scrapers,	90	Average number,	312
Singletrees,	91,000	Males (16 years and over),	311
Traction engines,	25	Children (under 16 years),	1
Weeders,	2,150	Smallest number,	266
Miscellaneous expenses,	$44,577	Largest number,	378
Rent of works,	$11,277	Total wages paid,	$159,700
Taxes (not internal revenue),	$7,791	Males,	$159,520
Interest, insurance, etc.,	$25,509	Children,	$180
Number of salaried persons,	35	Steam engines,	3
Total salaries,	$45,358	Horse power,	410
Officers of corporations,	2	Water wheels,	6
Salaries,	$12,000	Horse power,	340

Statistics concerning the dyeing and finishing of textiles are given in Bulletin No. 202, from which the following figures for Massachusetts are taken:

Dyeing and Finishing Textiles.

Classification.	1900	Classification.	1900
Number of establishments,	37	Value of stock and materials used — Con.	
Private firms,	15	All other materials,	$287,452
Corporations,	22	Freight,	$47,631
Amount of capital invested,	$15,206,200	Value of work done,	$8,868,290
Land,	$1,161,503	Wool dyed (pounds),	40,328
Buildings,	$1,960,972	Value,	$2,043
Machinery, tools, etc.,	$2,499,388	Woollen yarn dyed (pounds),	100,800
Cash and sundries,	$9,584,337	Value,	$7,059
Value of stock and materials used,	$3,110,910	Worsted yarn dyed (pounds),	382,525
Chemicals and dyestuffs,	$2,031,072	Value,	$29,002
Starch (pounds),	5,335,681	Worsted piece goods dyed (square yards),	438,520
Cost value,	$160,016	Value,	$19,952
Silk soap (pounds),	26,412	Cotton stock bleached (pounds),	29,650
Cost value,	$1,369	Value,	$1,743
Other soap (pounds),	186,838	Cotton stock dyed (pounds),	2,771,290
Cost value,	$8,137	Value,	$249,114
Fuel,	$393,711	Cotton yarn bleached (pounds),	6,453,500
Rent of power and heat,	$5,512	Value,	$98,662
Mill supplies,	$176,010		

Dyeing and Finishing Textiles — Concluded.

Classification.	1900	Classification.	1900
Value of work done — Con.		Number of salaried persons-Con.	
Cotton yarn dyed (pounds),	7,158,907	Superintendents, clerks, etc.,	195
Value,	$294,909	Salaries,	$313,206
Cotton piece goods bleached (square yards),	276,321,266	Males,	174
Value,	$1,637,830	Salaries,	$303,655
Cotton piece goods dyed (pounds),	90,458,727	Females,	21
Value,	$1,060,761	Salaries,	$9,551
Cotton piece goods printed (square yards),	262,619,600	Persons employed:	
Value,	$5,135,021	Average number,	4,678
Silk piece goods printed (square yards),	262,964	Males (16 years and over),	3,846
Value,	$20,350	Females (16 years and over),	735
Mixed goods,	$44,618	Children (under 16 years),	97
All other work done,	$267,226	Smallest number,	3,990
Miscellaneous expenses,	$866,829	Greatest number,	5,287
Rent of works,	$7,517	Total wages paid,	$2,081,015
Taxes (not internal revenue),	$85,717	Males,	$1,833,344
Insurance, interest, etc.,	$756,802	Females,	$229,597
Contract work,	$16,793	Children,	$18,074
Number of salaried persons,	239	Machinery, etc.:	
Total salaries,	$547,862	Printing machines (cotton),	69
Officers of corporations,	44	Steam engines,	281
Salaries,	$234,656	Horse power,	11,932
		Water wheels,	24
		Horse power,	2,360
		Electric motors,	9
		Horse power,	125

From Bulletin No. 203, devoted to the lumber industry in all its branches, we extract the data which follow:

Massachusetts was originally covered with forests of conifers, mixed with hard woods, but the State was long ago thoroughly lumbered, and to-day contains very little, if any, virgin forest, the cutting being confined principally to second growth. The product of Massachusetts has materially increased in the past 50 years, and in 1900 exhibits a value four times greater than in 1850, as will be seen by the following table:

Years.	Value of Product	Years.	Value of Product
1850,	$1,552,265	1880,	$3,120,184
1860,	2,218,144	1890,	5,211,607
1870,	3,556,870	1900,	6,526,230

The woodland has an area, by measurement from the maps of the State prepared by the United States Geological Survey, of 4,200 square miles, or 52 per cent of the area of the State. Very little of this, however, contains timber of mill size and quality. The following table shows the timber owned and cut in 1900, by species and average stand:

Species.	Owned (M feet, B. M.)	Average Stand	1900 cut (M feet, B. M.)
White pine,	340,400	10,300	261,133
Other conifers,	7,200	–	42,846
Hard woods,	27,900	–	42,539
Totals,	375,500	–	346,518

In the following table, we reproduce the statistics of the lumber industries of Massachusetts for the year 1900:

Lumber and Timber Products.

Classification.	1900
Number of establishments,	553
Private firms,	542
Corporations,	11
Number of sawmills,	534
Number of tie and timber camps,	19
Amount of capital invested,	$6,253,171
Aggregate for mills,	$6,103,721
In logging plants conducted by milling establishments,	$1,551,292
Timbered land tributary to mill,	$866,876
Other timbered land,	$364,412
All other land,	$113,623
Tools, implements, live stock, etc.,	$158,690
Logging railways and equipment,	$1,700
River improvement (exclusive of stock in chartered boom companies),	$2,532
Booms, chains, and supplies,	$599
Vessels used in transportation of lumber or logs, including steam tugs,	$112
Saw logs, bolts, hewed timber, ties, posts, etc., on hand (not delivered at mill),	$32,073
All other capital invested in logging,	$10,675
In sawmill plants,	$1,533,754
Land,	$264,898
Buildings, dry kilns, etc.,	$505,605
Machinery, tools, and implements,	$763,251
In planing mill plants, conducted by milling establishments,	$424,756
Land,	$62,445
Buildings, dry kilns, etc.,	$191,393
Machinery, tools, and implements,	$170,918

Lumber and Timber Products — Continued.

Classification.	1900
Amount of capital invested — Con.	
Aggregate for mills — Con.	
Live capital, total,	$2,593,919
Logs and bolts at mill,	$196,824
Lumber or other products (not planed or finished) on hand,	$1,075,171
Dressed lumber, stock in process, and remanufactured goods on hand,	$112,836
Cash on hand, bills receivable, unsettled ledger accounts, and all sundries not included in the foregoing items,	$1,209,088
Aggregate for independent timber camps,	$149,450
Total invested in plants,	$58,580
Timbered land,	$43,205
Tools, implements, live stock, etc.,	$13,775
All other capital invested in timber camps,	$1,600
Live capital, total,	$90,870
Value of products on hand,	$44,395
Cash and sundries,	$46,475
Total value of stock and materials used,	$3,034,828
For logging camps (conducted by milling establishments),	$491,816
Stumpage (feet, board measure),	153,213,000
Cost value,	$401,330
Supplies,	$68,786
All other materials,	$21,700
For sawmills,	$1,835,118
Logs and bolts purchased (cost value),	$1,670,196
Feet, board measure,	149,608,000
Cords,	14,030
Supplies,	$83,403
Power and heat,	$4,376
All other materials,	$70,868
Freight,	$6,275
For planing mills and remanufactures,	$647,925
Rough lumber (cost value),	$567,825
Feet, board measure,	52,096,000
Supplies,	$13,197
All other materials,	$58,043
Freight,	$8,860
For timber camps,	$59,969
Stumpage (cost value),	$31,870
Feet, board measure,	10,630,000
Supplies,	$7,291
All other materials,	$20,808
Products.	
Value of goods made and work done,	$6,526,230
Sawmill products (including the value of merchant products and amount received for custom work, but excluding the value of custom products),	$5,057,483
Planing mill products,	$1,243,408
Timber camp products,	$225,339
Quantity and value of sawed lumber (feet, board measure),	344,190,000
Selling value,	$4,005,845

Lumber and Timber Products — Continued.

CLASSIFICATION.	1900
PRODUCTS — Con.	
Quantity and value of sawed lumber (feet, board measure) — Con.	
Merchant products (feet, board measure),	273,858,000
Selling value,	$3,180,402
Custom products, estimated (feet, board measure),	70,332,000
Selling value (estimated),	$825,443
Rough Lumber: Merchant and Custom Sawed.	
Rough lumber, merchant and custom combined (feet, board measure),	342,058,000
Selling value,	$3,968,325
Conifers, total (feet, board measure),	299,911,000
Selling value,	$3,204,906
White pine (feet, board measure),	258,214,000
Selling value,	$2,695,876
Hemlock (feet, board measure),	12,234,000
Selling value,	$144,910
Spruce (feet, board measure),	29,216,000
Selling value,	$356,395
Cedar (feet, board measure),	175,000
Selling value,	$1,975
All other conifers (feet, board measure),	72,000
Selling value,	$5,750
Hard woods (feet, board measure),	42,147,000
Selling value,	$763,419
Ash (feet, board measure),	120,000
Selling value,	$2,145
Birch (feet, board measure),	1,000,000
Selling value,	$13,305
Chestnut (feet, board measure),	19,488,000
Selling value,	$251,843
Basswood (feet, board measure),	300,000
Selling value,	$2,995
Oak (feet, board measure),	16,091,000
Selling value,	$294,151
Poplar (feet, board measure),	225,000
Selling value,	$5,927
Black walnut (feet, board measure),	45,000
Selling value,	$1,875
Maple (feet, board measure),	2,397,000
Selling value,	$82,780
Other hard woods (feet, board measure),	2,481,000
Selling value,	$108,398
Shingles: Merchant and Custom Sawed.	
Shingles (merchant and custom),	20,500,000
Selling value,	$46,694
White pine,	14,596,000
Selling value,	$33,174
Cedar,	2,140,000
Selling value,	$5,093
Hemlock,	1,470,000
Selling value,	$3,390
Spruce,	1,984,000
Selling value,	$4,422

Lumber and Timber Products — Continued.

CLASSIFICATION.	1900
PRODUCTS — Con.	
Shingles: Merchant and Custom Sawed — Con.	
Shingles (merchant and custom) — Con.	
Other conifers,	150,000
Selling value,	$300
All hard woods,	160,000
Selling value,	$315
Sawmills: Cooperage materials,	$61,985
Hoops,	180,000
Selling value,	$1,080
Staves,	8,255,000
Selling value,	$49,890
Headings (sets),	398,000
Selling value,	$11,015
Other Sawed Products.	
Other sawed products,	$1,596,805
Bobbin and spool stock (feet, board measure),	827,000
Selling value,	$14,640
Furniture stock (feet, board measure),	753,000
Selling value,	$10,250
Agricultural implement stock (feet, board measure),	227,000
Selling value,	$4,540
Carriage and wagon stock (feet, board measure),	325,000
Selling value,	$8,090
Laths,	8,807,000
Selling value,	$23,483
All other sawed products,	$1,535,802
Amount received for custom work,	$211,742
Sawing,	$197,953
Grinding,	$13,789
Planing mill products,	$1,243,408
Gross value of finished lumber,	$359,089
Gross value of remanufactured products,	$846,039
Amount received for custom planing,	$38,289
Timber camp products,	$225,339
Basket stock (cords),	2
Selling value,	$20
Fence posts,	52,450
Selling value,	$5,358
Hard-wood and other logs, cut for export (feet, board measure),	20,000
Selling value,	$280
Logs for domestic manufacture, cut for sale (feet, board measure),	6,883,000
Selling value,	$52,660
Handle stock (cords),	40
Selling value,	$200
Hemlock bark (cords),	188
Selling value,	$724
Piles,	1,080
Selling value,	$2,065
Railway ties,	149,479
Selling value,	$54,474
Rived or shaved shingles,	706,000
Selling value,	$1,368

Lumber and Timber Products — Continued.

Classification.	1900
PRODUCTS — Con.	
Other Sawed Products — Con.	
Timber camp products — Con.	
Ship knees,	35
Selling value,	$1,050
Telegraph poles,	16,640
Selling value,	$26,658
Wheel stock (cords),	1
Selling value,	$30
Charcoal (bushels),	64,386
Selling value,	$7,140
All other products,	$30,387
Amount received for contract work,	$42,925
Miscellaneous expenses,	$371,852
Rent of works,	$18,029
Taxes, not including internal revenue,	$43,380
Rent of offices, insurance, interest, repairs, etc.,	$228,530
Contract work,	$81,913
Logging,	$74,093
Sawing,	$7,820
Salaried persons and salaries:	
In logging camps (conducted by milling establishments) —	
Salaried officials, clerks, etc.,	4
Salaries paid,	$700
In mills —	
Officers of corporations,	5
Salaries paid,	$8,800
General superintendents, managers, clerks, etc.,	88
Salaries paid,	$73,096
Males,	71
Salaries paid,	$65,992
Females,	17
Salaries paid,	$7,104
Persons employed:	
Aggregate average number,*	3,463
Males (16 years and over),	3,408
Females (16 years and over),	50
Children (under 16 years),	5
Aggregate smallest number employed at any one time during the year,	3,209
Aggregate greatest number employed at any one time during the year,	5,996
Employed in logging camps (conducted by milling establishments) —	
Average number of males,	695
Wages paid,	$284,573
Smallest number,	687
Greatest number,	1,709
Employed in mills —	
Average number,	2,674
Wages paid,	$1,176,758

* Not including persons employed in transportation of logs to mills.

Lumber and Timber Products — Concluded.

Classification.	1900
Persons employed — Con.	
Employed in mills — Con.	
Males (16 years and over),	2,619
Wages paid,	$1,161,837
Females (16 years and over),	50
Wages paid,	$14,046
Children (under 16 years),	5
Wages paid,	$875
Smallest number,	2,453
Greatest number,	4,083
Employed in timber camps:	
Average number of males,	94
Wages paid,	$38,330
Smallest number,	69
Greatest number,	204
Employed in transportation of logs to mills:	
Average number of males,	313
Wages paid,	$78,864
Total wages paid,*	$1,499,661
Males (16 years and over),	$1,484,740
Females (16 years and over),	$14,046
Children (under 16 years),	$875
Average number and cost of keep of animals used:	
Aggregate average number,	1,232
Cost of keep,	$101,360
Number used in logging for sawmills,	1,169
Cost of keep,	$95,295
Horses,	1,105
Cost of keep,	$91,614
Mules,	5
Cost of keep,	$500
Cattle,	59
Cost of keep,	$3,181
Number used in timber camps,	63
Cost of keep,	$6,065
Horses,	59
Cost of keep,	$6,020
Cattle,	4
Cost of keep,	$45
Number of steam engines,	341
Horse power,	15,074
Number of gas or gasoline engines,	11
Horse power,	244
Number of water wheels,	415
Horse power,	10,965
Number of electric motors,	8
Horse power,	102

* Not including wages paid to persons employed in transportation of logs to mills.

In the following table is given the entire logging business of the State, including the logging camps operated in connection with sawmills, together with those operated independently:

Number of establishments,	247
Amount of capital invested,	$1,700,742
Value of stock and materials used,	$551,785
Value of goods made and work done,	$1,681,801
Average number of persons employed,	789
Total amount paid in wages,	$322,903

Below we present the figures for establishments carrying on exclusively sawmill operations, separated from planing mills and timber camps for the purpose of showing this particular branch of the lumber industry.

Number of establishments,	534
Amount of capital invested,	$4,014,837
Value of stock and materials used,	$2,859,038
Value of goods made and work done,	$5,057,483
Average number of persons employed,	2,439
Total amount paid in wages,	$1,073,090

The figures below give an idea of the magnitude of the purely planing mill branch of the lumber industry. To the statistics of "independent" planing mills are added actual and estimated figures representing those branch planing mills which are operated in connection with sawmills. The independent planing mills are not included in any other statistics presented in the Bulletin referred to.

Number of establishments,	300
Amount of capital invested,	$4,657,629
Value of stock and materials used,	$4,283,679
Value of goods made and work done,	$7,535,689
Average number of persons employed,	2,669
Total amount paid in wages,	$1,447,734

Bulletin No. 236 is devoted to the manufacture of woollen goods, worsted goods, shoddy, wool and fur hats, hosiery and knit goods, carpets and rugs, wool scouring, etc. From the returns therein we find that, as compared with the other States in the Union, Massachusetts ranks first in the manufacture

of woollen goods; first in worsted goods, third in carpets and rugs, second in felt goods, and third in wool hats. Of the three leading cities of the country in wool manufacturing, Philadelphia, Pa., was first; Lawrence, Mass., second; and Providence, R. I., third. In the following table is shown the progress in the manufacture of all kinds of woollen goods, except hosiery and knit goods, in Massachusetts, since 1840:

Years.	Establishments	Capital	Materials Used	Product	Persons Employed	Wages Paid
1840, ...	144	$4,179,850	-	$7,082,898	5,076	-
1850, ...	119	9,089,342	$8,671,671	12,770,565	11,130	-
1860, ...	147	13,005,853	15,367,378	24,015,443	15,638	$3,658,589
1870, ...	226	26,722,900	33,795,994	52,270,608	28,025	9,809,718
1880, ...	214	36,764,000	40,283,171	64,968,209	34,717	11,027,822
1890, ...	219	66,568,586	42,273,379	67,599,321	37,739	13,732,316
1900, ...	195	90,128,754	49,120,181	81,041,537	42,069	16,057,849

The figures contained in the next table relate to the manufacture of woollen goods.

Woollen Goods.

Classification.	1900
Number of establishments, ...	131
Private firms, ...	77
Corporations, ...	54
Amount of capital invested, ...	$33,196,903
Land, ...	$2,357,173
Buildings, ...	$4,663,468
Machinery, tools, etc., ...	$5,706,431
Cash and sundries, ...	$20,469,831
Value of stock and materials used, ...	$18,273,424
Wool, foreign (pounds), ...	3,204,445
Cost value, ...	$767,172
Wool, domestic (pounds), ...	35,482,272
Cost value, ...	$7,610,619
Camel, alpaca, and vicuna hair (pounds), ...	29,499
Cost value, ...	$8,109
Mohair (pounds), ...	656,754
Cost value, ...	$269,637
Buffalo, cow, and other animal hair and fur (pounds), ...	879,331
Cost value, ...	$55,349
Cotton (bales), ...	10,059
Cotton (pounds), ...	4,746,530
Cost value, ...	$453,782

Woollen Goods — Continued.

Classification.	1900
Value of stock and materials used — Con.	
Shoddy (pounds),	8,628,598
Cost value,	$994,924
Wool waste and noils (pounds),	2,847,395
Cost value,	$855,126
Camel, alpaca, and vicuna noils (pounds),	100,773
Cost value,	$20,062
Mohair noils (pounds),	31,512
Cost value,	$7,332
Tops (pounds),	11,136
Cost value,	$7,799
Woollen yarn (pounds),	949,270
Cost value,	$329,444
Worsted yarn (pounds),	1,979,720
Cost value,	$1,685,696
Merino yarn (pounds),	50,080
Cost value,	$6,348
Cotton yarn (pounds),	3,813,317
Cost value,	$760,694
Silk yarn (pounds),	1,438
Cost value,	$8,619
Spun silk yarn (pounds),	1,700
Cost value,	$5,652
Linen (pounds),	4,000
Cost value,	$3,000
Jute, ramie, or other vegetable fiber (pounds),	5,984
Cost value,	$403
Shoddy made in mill for use therein (pounds),	12,891,959
Cost value,	$1,151,019
Soap,	$178,047
Oil,	$167,000
Chemicals and dyestuffs,	$1,246,294
Fuel,	$537,646
Rent of power and heat,	$29,239
Mill supplies,	$187,495
All other materials,	$667,100
Freight,	$259,817
Cotton yarn made in mill for use therein (pounds),	12,000
Value of goods made and work done,	$30,888,104
All-wool woven goods, whether woollen or worsted —	
Wool-cloths, doeskins, cassimeres, cheviots, tweeds, indigo flannels, and broadcloths, for men's wear (square yards),	10,735,748
Selling value,	$6,879,279
Worsted coatings, serges, and suitings, for men's wear (square yards),	874,613
Selling value,	$1,272,831
Woollen overcoatings, cloakings, kerseys, etc., for men's or women's wear (square yards),	6,151,856
Selling value,	$5,544,178
Worsted overcoatings and cloakings, for men's or women's wear (square yards),	6,270
Selling value,	$3,314

Woollen Goods — Continued.

Classification.	1900
Value of goods made and work done — Con.	
All-wool woven goods, whether woollen or worsted — Con.	
Wool dress goods, sackings, tricots, ladies' cloth, broadcloth, and other all-wool goods for women's wear, and opera and similar flannels (square yards),	11,537,565
Selling value,	$3,766,850
Worsted dress goods, cassimeres, serges, and other worsted goods for women's wear, and buntings (square yards),	1,086,359
Selling value,	$403,917
Carriage cloths of all weights (square yards),	802,311
Selling value,	$365,147
Flannels for underwear (square yards),	2,219,563
Selling value,	$689,248
Horse blankets (square yards),	13,750
Selling value,	$9,000
Union and cotton-mixed woven goods —	
Unions, tweeds, cheviots, cassimeres, or other goods for men's wear (square yards),	3,849,310
Selling value,	$1,535,204
Overcoatings and cloakings (square yards),	1,439,836
Selling value,	$715,543
Sackings, tricots, and dress goods for women's wear, and opera and similar flannels (square yards),	4,414,628
Selling value,	$1,345,081
Flannels for underwear (square yards),	3,011,516
Selling value,	$587,105
Blankets (square yards),	433,252
Selling value,	$218,928
Horse blankets (square yards),	1,375
Selling value,	$655
Carriage robes (square yards),	387,085
Selling value,	$84,312
Wool-filling cassimeres, doeskins, jeans, tweeds, coatings, suitings, and other cotton-warp goods for men's wear (square yards),	6,966,602
Selling value,	$2,178,525
Worsted-filling cassimeres, doeskins, jeans, tweeds, coatings, suitings, and other cotton-warp goods for men's wear (square yards),	489,816
Selling value,	$296,206
Wool-filling overcoatings and cloakings (square yards),	1,055,861
Selling value,	$224,270
Astrakhans and similar goods (square yards),	17,576
Selling value,	$10,150
Satinets and linsey (square yards),	10,326,148
Selling value,	$2,237,965
Wool-filling dress goods and repellents (square yards),	865,380
Selling value,	$209,430
Domett flannels and shirtings (square yards),	167,000
Selling value,	$182,700
Linings, Italian cloths, and lastings (square yards),	2,180,798
Selling value,	$181,041
Cotton-warp blankets (square yards),	1,120,224
Selling value,	$216,295

Woollen Goods — Continued.

Classification.	1900
Value of goods made and work done — Con.	
Union and cotton-mixed woven goods — Con.	
Horse blankets (square yards),	824,315
Selling value,	$130,477
Carriage robes (square yards),	244,458
Selling value,	$114,176
Woollen and worsted upholstery goods (square yards),	106,667
Selling value,	$200,000
Other upholstery goods,	$64,779
Felt cloths (square yards),	110,034
Selling value,	$48,455
Woollen yarns, all wool (pounds),	676,140
Selling value,	$320,879
Worsted yarn and tops (pounds),	50,000
Selling value,	$30,000
Woollen or worsted yarn, union or merino, cotton mixed (pounds),	197,200
Selling value,	$42,936
Mohair and similar yarn (pounds),	200,000
Selling value,	$200,000
Noils (pounds),	1,331
Selling value,	$532
Waste (pounds),	390,932
Selling value,	$22,892
Flocks (pounds),	132,500
Selling value,	$17,646
Eiderdown shawls (dozen),	361,000
Selling value,	$126,403
Boot and shoe linings (square yards),	11,420
Selling value,	$8,800
Jersey cloths and stockinet (square yards),	2,784
Selling value,	$1,010
All other products,	$120,175
Contract work,	$281,770
Miscellaneous expenses,	$1,745,199
Rent of works,	$114,538
Taxes (not internal revenue),	$208,768
Interest, insurance, etc.,	$1,331,195
Contract work,	$90,698
Number of salaried persons,	438
Total salaries,	$729,724
Persons employed:	
Average number,	17,717
Males (16 years and over),	11,177
Females (16 years and over),	5,865
Children (under 16 years),	675
Smallest number,	14,966
Greatest number,	21,040

Woollen Goods — Concluded.

Classification.	1900
Total wages paid,	$6,823,051
Males,	$4,803,450
Females,	$1,888,520
Children,	$131,081
Skilled operatives:	
Spinners,	1,621
Males,	1,467
Females,	87
Children,	67
Weavers,	6,123
Males,	3,101
Females,	3,014
Children,	8
Finishers,	2,282
Males,	1,522
Females,	701
Children,	59
Machinery, etc.:	
Sets of woollen cards,	1,251
Combing machines,	19
Spindles,	472,984
Looms,	8,939
Broad,	5,925
Narrow,	3,014
Braiders,	1,000
Steam engines,	187
Horse power,	21,858
Water wheels,	202
Horse power,	14,245
Electric motors,	9
Horse power,	170

The next table gives statistics for the principal subdivision of the wool manufacture, namely, the combed-wool department, in which are manufactured worsted cloths and suitings, worsted dress goods, and large quantities of worsted yarn for use in carpet manufacture. The worsted mills are distinguished from the woollen mills by the initial processes to which the fiber is subjected.

Worsted Goods.

CLASSIFICATION.	1900
Number of establishments,	45
Private firms,	22
Corporations,	23
Amount of capital invested,	$45,790,300
Land,	$2,988,592
Buildings,	$4,539,224
Machinery, tools, etc.,	$8,585,662
Cash and sundries,	$29,676,822
Value of stock and materials used,	$25,315,707
Wool, foreign (pounds),	24,850,427
Cost value,	$6,511,450
Wool, domestic (pounds),	39,012,421
Cost value,	$9,106,578
Camel, alpaca, and vicuna hair (pounds),	1,562,491
Cost value,	$329,040
Mohair (pounds),	256,347
Cost value,	$117,991
Cotton (bales),	4,425
Cotton (pounds),	2,562,632
Cost value,	$250,878
Shoddy (pounds),	643,563
Cost value,	$93,891
Wool waste and noils (pounds),	184,747
Cost value,	$55,471
Camel, alpaca, and vicuna noils (pounds),	3,238
Cost value,	$848
Tops (pounds),	1,490,776
Cost value,	$705,605
Woollen yarn (pounds),	477,831
Cost value,	$280,328
Worsted yarn (pounds),	4,870,028
Cost value,	$4,257,607
Merino yarn (pounds),	172,488
Cost value,	$34,554
Cotton yarn (pounds),	2,640,290
Cost value,	$842,712
Silk yarn (pounds),	16
Cost value,	$96
Spun silk yarn (pounds),	17,621
Cost value,	$63,922
Linen (pounds),	284
Cost value,	$229
Soap,	$156,422
Oil,	$63,130
Chemicals and dyestuffs,	$869,968
Fuel,	$449,281
Rent of power and heat,	$34,368
Mill supplies,	$182,460

Worsted Goods — Continued.

CLASSIFICATION.	1900
Value of stock and materials used — Con.	
All other materials,	$761,558
Freight,	$147,320
Cotton yarn made in mill for use therein (pounds),	1,956,949
Value of goods made and work done,	$40,557,363
All-wool woven goods, whether woollen or worsted —	
Wool cloths, doeskins, cassimeres, cheviots, tweeds, indigo flannels, and broadcloths, for men's wear (square yards),	2,094,678
Selling value,	$1,396,451
Worsted coatings, serges, and suitings, for men's wear (square yards),	21,180,544
Selling value,	$17,413,922
Woolen overcoatings, cloakings, kerseys, etc., for men's or women's wear (square yards),	1,365,790
Selling value,	$1,388,555
Wool dress goods, sackings, tricots, ladies' cloth, broadcloth and other all-wool goods, for women's wear, and opera and similar flannels (square yards),	1,068,475
Selling value,	$580,940
Worsted dress goods, cassimeres, serges, and other worsted goods, for women's wear, and buntings (square yards),	13,026,286
Selling value,	$4,038,468
Blankets (square yards),	187,530
Selling value,	$42,194
Union or cotton-mixed sackings, tricots, and dress goods for women's wear, and opera and similar flannels (square yards),	169,234
Selling value,	$55,061
Wool-filling cassimeres, doeskins, jeans, tweeds, coatings, suitings, and other cotton-warp goods for men's wear (square yards),	450,000
Selling value,	$330,000
Worsted-filling cassimeres, doeskins, jeans, tweeds, coatings, suitings, and other cotton-warp goods, for men's wear (square yards),	2,084,766
Selling value,	$1,083,222
Worsted-filling dress goods, delaines, cassimeres, serges, mohairs, alpaca, and other stuffs, for women's wear (square yards),	21,794,250
Selling value,	$4,128,159
Wool-filling dress goods and repellents (square yards),	347,882
Selling value,	$155,042
Linings, Italian cloths, and lastings (square yards),	6,309,534
Selling value,	$1,699,430
Upholstery goods,	$39,025
Woollen yarn, all wool (pounds),	434,192
Selling value,	$162,982
Worsted yarns and tops (pounds),	8,828,568
Selling value,	$4,990,268
Woolen or worsted yarn, union or merino, cotton mixed (pounds),	878,506
Selling value,	$746,808
Mohair and similar yarn (pounds),	245,616
Selling value,	$102,899
Noils (pounds),	4,879,286
Selling value,	$1,281,606

Worsted Goods — Concluded.

Classification.	1900
Value of goods made and work done — Con.	
Waste (pounds),	1,185,361
Selling value,	$221,900
Flocks (pounds),	164,329
Selling value,	$5,768
All other products,	$84,730
Amount received for contract work,	$609,933
Miscellaneous expenses,	$1,681,861
Rent of works,	$46,539
Taxes (not internal revenue),	$186,366
Interest, insurance, etc.,	$1,362,930
Contract work,	$86,026
Number of salaried persons,	503
Total salaries,	$796,250
Persons employed:	
Average number,	18,867
Males (16 years and over),	9,380
Females (16 years and over),	8,410
Children (under 16 years),	1,077
Smallest number,	16,414
Greatest number,	21,035
Total wages paid,	$7,055,585
Males,	$4,177,429
Females,	$2,654,009
Children,	$224,147
Skilled operatives:	
Spinners,	1,932
Males,	482
Females,	1,152
Children,	298
Weavers,	4,396
Males,	2,178
Females,	2,218
Finishers,	2,649
Males,	1,411
Females,	1,199
Children,	39
Machinery, etc.:	
Sets of woollen cards,	181
Combing machines,	358
Spindles,	429,526
Looms,	9,584
Steam engines,	151
Horse power,	27,001
Water wheels,	64
Horse power,	10,262
Electric motors,	15
Horse power,	740
Other power,	1
Horse power,	10

The manufacture of carpets is an important branch of the wool manufacturing industry, and the following table presents the returns for 1900 for the manufacture of carpets and rugs:

Carpets and Rugs.

CLASSIFICATION.	1900
Number of establishments,	8
Private firms,	1
Corporations,	7
Amount of capital invested,	$9,400,829
Land,	$614,572
Buildings,	$1,503,894
Machinery, tools, etc.,	$2,010,830
Cash and sundries,	$5,271,533
Value of stock and materials used,	$3,989,945
Wool, foreign (pounds),	13,746,907
Cost value,	$2,063,995
Cotton (pounds),	641,460
Cost value,	$36,828
Wool waste and noils (pounds),	403,698
Cost value,	$65,000
Worsted yarn (pounds),	2,142,847
Cost value,	$835,863
Cotton yarn (pounds),	2,163,677
Cost value,	$250,003
Linen (pounds),	1,175,131
Cost value,	$159,702
Jute, ramie, etc. (pounds),	2,931,326
Cost value,	$186,779
Soap,	$4,712
Oil,	$19,413
Chemicals and dyestuffs,	$126,315
Fuel,	$97,556
Rent of power and heat,	$600
Mill supplies,	$28,750
All other materials,	$101,799
Freight,	$12,630
Cotton made in mill for use therein (pounds),	536,374
Value of goods made and work done,	$6,966,237
Carpets —	
Ingrain 2-ply (square yards),	2,295,695
Selling value,	$976,588
Tapestry Brussels (running yards of 27 inches wide),	1,812,447
Selling value,	$1,069,050
Body Brussels (running yards of 27 inches wide),	2,536,261
Selling value,	$2,143,570
Tapestry velvet (running yards of 27 inches wide),	105,665
Selling value,	$78,296
Wilton and Wilton velvet (running yards of 27 inches wide),	891,034
Selling value,	$1,259,781
Axminster (running yards of 27 inches wide),	685,229
Selling value,	$512,355

Carpets and Rugs — Continued.

CLASSIFICATION.	1900
Value of goods made and work done — Con.	
Rugs —	
Wilton (square yards),	164,401
Selling value,	$262,118
Moquette and Axminster (square yards),	289,698
Selling value,	$297,495
Other rugs (square yards),	52,000
Selling value,	$65,000
Woollen yarn, all wool (pounds),	312,000
Selling value,	$93,740
Worsted yarns and tops (pounds),	535,722
Selling value,	$205,144
Waste (pounds),	31,000
Selling value,	$3,100
Miscellaneous expenses,	$427,241
Rent of works,	$683
Taxes (not internal revenue),	$77,957
Interest, insurance, etc.,	$329,705
Contract work,	$18,896
Number of salaried persons,	71
Total salaries,	$127,264
Persons employed:	
Average number,	4,480
Males (16 years and over),	2,022
Females (16 years and over),	1,954
Children (under 16 years),	504
Smallest number,	3,742
Greatest number,	4,890
Total wages paid,	$1,720,289
Males,	$996,216
Females,	$629,638
Children,	$94,435
Skilled operatives:	
Spinners,	336
Males,	34
Females,	302
Weavers,	1,131
Males,	430
Females,	701
Finishers,	253
Males,	92
Females,	161
Machinery, etc.:	
Sets of woollen cards,	66
Combing machines,	47
Spindles,	50,344
Looms,	1,223
Steam engines,	23
Horse power,	4,690

Carpets and Rugs — Concluded.

Classification.	1900
Machinery, etc. — Con.	
Water wheels,	10
Horse power,	1,185
Electric motors,	2
Horse power,	125

The following table exhibits the condition of the felt goods manufacture in 1900:

Felt Goods.

Classification.	1900	Classification.	1900
Number of establishments,	7	Value of goods made and work done,	$1,526,830
Private firms,	2	Felt cloths (square yards),	569,500
Corporations,	5	Selling value,	$142,385
Amount of capital invested,	$1,338,640	Boot and shoe linings (square yards),	989,717
Land,	$134,400	Selling value,	$500,938
Buildings,	$229,930	Trimming and lining felts, felt skirts, etc. (square yards),	983,155
Machinery, tools, etc.,	$324,212	Selling value,	$288,681
Cash and sundries,	$650,098	All other felts,	$392,882
Value of stock and materials used,	$953,203	All other products,	$201,944
Wool, foreign (pounds),	734,713	Miscellaneous expenses,	$67,612
Cost value,	$143,995	Rent of works,	$6,080
Wool, domestic (pounds),	680,164	Taxes (not internal revenue),	$7,169
Cost value,	$253,092	Interest, insurance, etc.,	$54,363
Buffalo and other animal hair and fur (pounds),	185,707	Number of salaried persons,	19
Cost value,	$11,445	Total salaries,	$41,397
Cotton (pounds),	814,157	Persons employed:	
Cost value,	$50,628	Average number,	464
Shoddy (pounds),	536,242	Males (16 years and over),	402
Cost value,	$56,191	Females (16 years and over),	47
Wool waste and noils (pounds),	929,043	Children (under 16 years),	15
Cost value,	$220,900	Smallest number,	346
Tops (pounds),	74,979	Greatest number,	526
Cost value,	$48,736	Total wages paid,	$180,795
Merino yarn (pounds),	31,866	Males,	$165,861
Cost value,	$6,373	Females,	$12,512
Soap,	$8,955	Children,	$2,422
Oil,	$2,107	Skilled operatives:	
Chemicals and dyestuffs,	$47,870	Finishers,	16
Fuel,	$21,986	Males,	5
Mill supplies,	$9,647	Females,	10
All other materials,	64,331	Children,	1
Freight,	$6,947		

Felt Goods — Concluded.

Classification.	1900	Classification.	1900
Machinery, etc.:		Machinery, etc. — Con.	
Sets of woollen cards,	66	Water wheels,	10
Steam engines,	9	Horse power,	920
Horse power,	810	Electric motors,	1
		Horse power,	25

Owing to the tendency in the wool manufacture to specialize or subdivide its branches, the statistics of wool scouring were gathered separately. They are given in the following table:

Wool Scouring.

Classification.	1900	Classification.	1900
Number of establishments,	5	Miscellaneous expenses,	$30,569
Private firms,	3	Rent of works,	$1,655
Corporations,	2	Taxes (not internal revenue),	$3,355
		Interest, insurance, etc.,	$25,559
Amount of capital invested,	$354,154		
Land,	$18,750	Number of salaried persons,	20
Buildings,	$75,000	Total salaries,	$44,176
Machinery, tools, etc.,	$166,500		
Cash and sundries,	$93,904	Persons employed:	
		Average number,	298
Value of stock and materials used,	$78,371	Males,	297
Soap,	$10,268	Females,	1
Chemicals and dyestuffs,	$21,127	Smallest number,	175
Fuel,	$15,934	Greatest number,	416
Rent of power and heat,	$1,146		
Mill supplies,	$15,020	Total wages paid,	$145,946
All other materials,	$1,702	Males,	$145,556
Freight,	$13,174	Females,	$390
		Steam engines,	6
Value of goods made and work done,	$334,912	Horse power,	890
Pounds of wool scoured,	30,709,844	Water wheels,	5
Amount received,	$334,912	Horse power,	490

Shoddy is used principally in wool manufacture in the production of low-grade satinets and other heavy cotton-warp goods. The following table contains a statement of the principal statistics for 1900:

Shoddy.

Classification.	1900	Classification.	1900
Number of establishments,	29	Value of goods made and work done — Con.	
Private firms,	24	Flocks (pounds),	79,180
Corporations,	5	Selling value,	$5,382
Amount of capital invested,	$769,294	Contract work,	$86,284
Land,	$82,085	Miscellaneous expenses,	$50,027
Buildings,	$188,858	Rent of works,	$7,368
Machinery, tools, etc.,	$215,885	Taxes (not internal revenue),	$5,372
Cash and sundries,	$282,466	Interest, insurance, etc.,	$37,287
Value of stock and materials used,	$685,123	Number of salaried persons,	30
Wool, domestic (pounds),	7,000	Total salaries,	$34,336
Cost value,	$2,800	Persons employed:	
Wool waste and noils (pounds),	305,500	Average number,	307
Cost value,	$69,210	Males (16 years and over),	260
Pieces, clippings, mill waste, rags, etc. (pounds),	11,205,073	Females (16 years and over),	44
Cost value,	$526,164	Children (under 16 years),	3
Soap,	$65	Smallest number,	234
Oil,	$19,946	Greatest number,	449
Chemicals and dyestuffs,	$16,260	Total wages paid,	$127,715
Fuel,	$26,013	Males,	$114,492
Mill supplies,	$10,285	Females,	$12,794
All other materials,	$4,107	Children,	$429
Freight,	$10,273	Machinery, etc.:	
Value of goods made and work done,	$988,189	Sets of woollen cards,	58
Shoddy (pounds),	4,543,254	Steam engines,	21
Selling value,	$622,454	Horse power,	1,952
Wool extract (pounds),	1,922,863	Gas or gasoline engines,	1
Selling value,	$274,069	Horse power,	20
		Water wheels,	30
		Horse power,	1,650

The wool-hat manufacture is properly a part of the felt industry, the hats being made by a process of felting, and thus distinguished from the ordinary products of the loom. With the United States Census office, it has been customary to include wool hats in the wool manufacture, but under the system of classification obtaining in Massachusetts the product has always been included under "Clothing" upon the ground that the hat is an ultimate product, while dress goods, felt cloths, etc., have not reached their final use when produced by the mill. The following table gives the data for the manufacture of wool hats:

Wool Hats.

Classification.	1900	Classification.	1900
Number of establishments,	4	Value of goods made and work done — Con.	
Private firms,	1	Fur hats (dozen),	20,494
Corporations,	3	Selling value,	$153,705
Amount of capital invested,	$402,082	Wool hat bodies, etc. (dozen),	3,500
Land,	$17,000	Selling value,	$10,000
Buildings,	$40,000		
Machinery, tools, etc.,	$38,500	Miscellaneous expenses,	$97,319
Cash and sundries,	$306,582	Rent of works,	$1,200
		Taxes (not internal revenue),	$2,784
Value of stock and materials used,	$587,902	Interest, insurance, etc.,	$93,335
Wool, foreign (pounds),	50,000		
Cost value,	$25,000	Number of salaried persons,	17
Wool, domestic (pounds),	920,738	Total salaries,	$15,459
Cost value,	$242,612	Persons employed:	
Animal hair, etc. (pounds),	61,482	Average number,	541
Cost value,	$42,196	Males (16 years and over),	382
Wool waste and noils (pounds),	84,467	Females (16 years and over),	144
Cost value,	$47,867	Children (under 16 years),	15
Soap,	$550	Smallest number,	529
Oil,	$140	Greatest number,	662
Chemicals and dyestuffs,	$49,290		
Fuel,	$15,819	Total wages paid,	$278,129
Mill supplies,	$2,000	Males,	$228,586
All other materials,	$152,199	Females,	$47,005
Freight,	$10,229	Children,	$2,538
		Machinery, etc.:	
Value of goods made and work done,	$1,103,003	Sets of woollen cards,	30
Wool hats (dozen),	247,163	Formers for fur hats,	2
Selling value,	$939,298	Steam engines,	4
		Horse power,	475

Until the census of 1900, no attempt had been made to obtain a separate statement of the statistics for the fur-hat manufacture. They had been included with those of "hats and caps, not including wool hats." This Department has never made any distinction between fur and wool hats, classifying them, as stated on page 209, under Clothing. The material from which fur hats are made is the fur of the rabbit, coney, and nutria, and is mostly imported, sometimes on the skin, but more often cut, although there are some large fur-cutting establishments in the United States, and some of the most important fur-hat factories cut their own fur. The statistics for 1900 follow:

Fur Hats.

Classification.	1900	Classification.	1900
Number of establishments,	11	Miscellaneous expenses,	$97,787
Private firms,	9	Rent of works,	$9,910
Corporations,	2	Taxes (not internal revenue),	$10,567
Amount of capital invested,	$1,467,700	Interest, insurance, etc.,	$70,410
Land,	$46,356	Contract work,	$6,900
Buildings,	$319,101	Number of salaried persons,	54
Machinery, tools, etc.,	$363,939	Total salaries,	$55,659
Cash and sundries,	$738,304	Persons employed:	
Value of stock and materials used,	$1,389,546	Average number,	1,823
Buffalo, cow, and other animal hair and fur (pounds),	456,593	Males (16 years and over),	976
Cost value,	$542,035	Females (16 years and over),	834
Fur hat bodies, and hats in the rough (dozen),	29,338	Children (under 16 years),	13
Cost value,	$139,889	Smallest number,	1,377
All other materials which are components of the product,	$487,573	Greatest number,	2,380
Chemicals and dyestuffs,	$62,930	Total wages paid,	$790,786
Fuel,	$26,316	Males,	$514,262
Rent of power and heat,	$1,012	Females,	$274,254
Mill supplies,	$4,140	Children,	$2,270
All other materials,	$120,540	Skilled operatives:	
Freight,	$5,111	Finishers,	96
Value of goods made and work done,	$2,630,964	Males,	96
Fur hats (dozen),	227,032	Machinery, etc.:	
Selling value,	$2,244,941	Formers for fur hats,	19
Fur hat bodies and hats in the rough (dozen),	4,322	Steam engines,	9
Selling value,	$8,273	Horse power,	835
All other products,	$377,750	Gas or gasoline engines,	1
		Horse power,	10
		Electric motors,	3
		Horse power,	150

The progress of the industry known as Hosiery and Knit Goods is shown in the following summary for the census years 1860, 1870, 1880, 1890, and 1900:

Years.	Establishments	Capital	Materials Used	Product	Persons Employed	Wages Paid
1860,	15	$155,200	$132,075	$314,120	388	$94,692
1870,	32	1,570,500	1,515,326	3,213,481	2,415	848,864
1880,	57	1,467,375	1,394,748	2,483,596	3,411	608,067
1890,	74	4,497,940	2,552,705	5,082,087	4,562	1,392,630
1900,	54	6,238,672	2,910,640	6,620,257	6,667	2,091,258

In the following table are reproduced the data for the manufacture of hosiery and knit goods for 1900:

Hosiery and Knit Goods.

Classification.	1900	Classification.	1900
Number of establishments,	54	Value of goods made and work done,	$6,620,257
Private firms,	27	Woollen half hose (dozen),	32,009
Corporations,	27	Selling value,	$72,444
Amount of capital invested,	$6,288,672	Woollen hose (dozen),	21,311
Land,	$369,094	Selling value,	$44,358
Buildings,	$711,522	Merino or mixed half hose (dozen),	48,149
Machinery, tools, etc.,	$1,268,522	Selling value,	$49,225
Cash and sundries,	$3,939,534	Merino or mixed hose (dozen),	2,160
Value of stock and materials used,	$2,910,640	Selling value,	$3,240
Wool, foreign (pounds),	2,000	Cotton half hose (dozen),	223,420
Cost value,	$1,000	Selling value,	$321,076
Wool, domestic (pounds),	1,144,940	Cotton hose (dozen),	2,031,921
Cost value,	$252,252	Selling value,	$1,384,865
Cotton (pounds),	10,915,958	Silk hose (dozen),	4,902
Cost value,	$781,259	Selling value,	$77,112
Shoddy (pounds),	65,075	Shirts and drawers —	
Cost value,	$9,797	Merino or mixed (dozen),	75,121
Wool waste and noils (pounds),	204,756	Selling value,	$284,956
Cost value,	$68,796	All wool (dozen),	64,356
Tops (pounds),	5,000	Selling value,	$505,379
Cost value,	$3,400	All cotton (dozen),	852,167
Woollen yarn (pounds),	128,631	Selling value,	$2,304,872
Cost value,	$63,321	Silk or silk mixed (dozen),	4,500
Worsted yarn (pounds),	411,468	Selling value,	$37,830
Cost value,	$380,425	Combination suits —	
Merino yarn (pounds),	44,604	Merino or mixed (dozen),	30,514
Cost value,	$27,794	Selling value,	$231,433
Cotton yarn (pounds),	2,610,885	All wool (dozen),	969
Cost value,	$628,635	Selling value,	$23,897
Silk yarn (pounds),	10,114	All cotton (dozen),	12,069
Cost value,	$31,816	Selling value,	$96,406
Spun silk yarn (pounds),	20,570	Silk or silk mixed (dozen),	1,281
Cost value,	$64,044	Selling value,	$16,200
Linen (pounds),	678	Leggins and gaiters (dozen),	4,852
Cost value,	$678	Selling value,	$24,987
Soap,	$7,682	Gloves and mittens (dozen),	51,440
Oil,	$1,602	Selling value,	$110,449
Chemicals and dyestuffs,	$121,525	Hoods, scarfs, nublas, etc., (dozen),	1,060
Fuel,	$63,119	Selling value,	$6,850
Rent of power and heat,	$8,595	Cardigan jackets, sweaters, etc. (dozen),	7,476
Mill supplies,	$22,834	Selling value,	$116,755
All other materials,	$348,143	Shawls (dozen),	416
Freight,	$23,923	Selling value,	$1,261
Cotton yarn made in mill for use therein (pounds),	8,555,495		

Hosiery and Knit Goods — Concluded.

Classification.	1900	Classification.	1900
Value of goods made and work done — Con.		Total wages paid,	$2,091,258
Fancy knit goods, wristers, etc. (dozen),	10,841	Males,	$752,031
Selling value,	$26,860	Females,	$1,263,543
Boot and shoe linings (square yards),	905,000	Children,	$75,684
Selling value,	$235,750	Skilled operatives:	
Astrakhans (square yards),	24,000	Spinners,	115
Selling value,	$11,843	Males,	88
Jersey cloth and stockinet (square yards),	461,134	Females,	27
Selling value,	$163,051	Knitters,	901
Cotton yarn (pounds),	1,880,670	Males,	379
Selling value,	$336,887	Females,	496
Waste (pounds),	172,979	Children,	26
Selling value,	$6,959	Finishers,	358
All other products,	$32,985	Males,	227
Contract work,	$92,326	Females,	120
Miscellaneous expenses,	$528,103	Children,	11
Rent of works,	$18,580	Machinery, etc.:	
Taxes (not internal revenue),	$55,519	Sets of woollen cards,	39
Interest, insurance, etc.,	$340,054	Combing machines,	3
Contract work,	$113,950	Spindles,	108,938
Number of salaried persons,	166	Sewing machines,	1,855
Total salaries,	$212,753	Knitting machines,	5,003
Persons employed:		Steam engines,	46
Average number,	6,667	Horse power,	4,533
Males (16 years and over),	1,658	Gas or gasoline engines,	1
Females (16 years and over),	4,549	Horse power,	8
Children (under 16 years),	460	Water wheels,	11
Smallest number,	5,715	Horse power,	1,940
Greatest number,	7,690	Electric motors,	3
		Horse power,	35
		Other engines,	1
		Horse power,	4

According to Bulletin No. 215, Massachusetts leads in the manufacture of cotton goods and cotton small wares, the aggregate value of goods made in 1900 being $111,125,175, or about one-third of the total product of the United States. The progress made in cotton manufacturing in this State since 1840 is shown in the following table:

Years.	Establishments	Capital	Stock Used	Product	Persons Employed	Wages Paid
1840,	278	$17,414,099	-	$16,553,423	20,928	-
1850,	213	28,455,630	$11,289,309	19,712,461	28,730	-
1860,	217	33,704,674	17,214,592	38,004,255	38,451	$7,798,476

Years.	Establishments	Capital	Stock Used	Product	Persons Employed	Wages Paid
1870, ...	191	$44,714,375	$37,371,599	$59,493,153	43,512	$13,589,305
1880, ...	175	72,291,601	35,994,109	72,289,518	61,844	15,828,571
1890, ...	187	128,838,837	56,586,283	100,202,882	75,544	25,118,365
1900, ...	177	156,289,451	54,389,045	111,125,175	92,515	32,478,697

In the following table we reproduce the statistics shown in the bulletin for cotton goods for 1900:

Cotton Goods.

Classification.	1900
Number of establishments, ...	163
Private firms, ...	25
Corporations, ...	138
Amount of capital invested, ...	$155,761,193
Land, ...	$8,716,746
Buildings, ...	$30,066,848
Machinery, tools, etc., ...	$57,928,100
Cash and sundries, ...	$59,049,499
Value of stock and materials used, ...	$54,068,038
Cotton —	
Sea island (pounds), ...	8,502,845
Cost value, ...	$1,194,021
Other domestic (pounds), ...	517,088,846
Cost value, ...	$33,771,414
Egyptian and other foreign (pounds), ...	35,292,324
Cost value, ...	$3,944,845
Yarns —	
Cotton (pounds), ...	14,770,086
Cost value, ...	$3,307,608
Woollen (pounds), ...	120,776
Cost value, ...	$29,960
Worsted (pounds), ...	113,850
Cost value, ...	$89,417
Silk (pounds), ...	142,249
Cost value, ...	$676,210
Spun silk (pounds), ...	78,679
Cost value, ...	$306,273
Other yarns (pounds), ...	1,005,784
Cost value, ...	$219,551
Waste of other mills (pounds), ...	22,392,884
Cost value, ...	$688,860
Oil, ...	$147,001
Starch, ...	$405,536
Chemicals and dyestuffs, ...	$2,357,105
Fuel, ...	$2,132,986
Rent of power and heat, ...	$47,728

Cotton Goods — Continued.

CLASSIFICATION.	1900
Value of stock and materials used — Con.	
Mill supplies,	$2,527,224
All other materials,	$1,575,707
Freight,	$646,592
Value of goods made and work done,	$110,478,327
Plain cloths for printing or converting, not finer than No. 28 warp (square yards),	687,235,050
Selling value,	$22,164,741
Plain cloths for printing or converting, finer than No. 28 warp (square yards),	240,170,139
Selling value,	$9,774,579
Brown or bleached sheetings and shirtings (square yards),	176,283,924
Selling value,	$9,255,612
Twills and sateens (square yards),	86,668,240
Selling value,	$5,859,028
Fancy woven fabrics (square yards),	137,064,111
Selling value,	$10,995,987
Ginghams (square yards),	53,932,358
Selling value,	$3,949,351
Sail duck (square yards),	153,328
Selling value,	$38,910
Other duck (square yards),	17,750,629
Selling value,	$1,638,320
Drills (square yards),	20,475,203
Selling value,	$1,316,071
Ticks, denims, and stripes (square yards),	63,794,395
Selling value,	$5,380,689
Cottonades (square yards),	1,190,555
Selling value,	$145,606
Napped fabrics (square yards),	137,199,384
Selling value,	$9,328,653
Corduroy, cotton velvet, and plush (square yards),	1,687,597
Selling value,	$349,343
Mosquito and other netting (square yards),	1,958,116
Selling value,	$137,175
Tapestries — piece goods and curtains (square yards),	447,267
Selling value,	$50,494
Bags and bagging (square yards),	8,240,942
Selling value,	$312,132
Tape and webbing (pieces),	2,166
Selling value,	$363
Yarns for sale (pounds),	87,656,177
Selling value,	$18,205,806
Sewing cotton (pounds),	3,390,883
Selling value,	$2,800,495
Twine (pounds),	1,245,540
Selling value,	$135,639
Batting and wadding (pounds),	380,500
Selling value,	$18,524
Waste for sale (pounds),	114,256,895
Selling value,	$2,609,039

Cotton Goods — Continued.

CLASSIFICATION.	1900
Value of goods made and work done — Con.	
Other products of cotton,	$1,182,466
All other products,	$4,829,304
Goods exported during the year ending June 30, 1900,	$3,489,240
Piece goods (pounds),	361,768,746
Yarns spun and not woven in the mill (pounds),	88,970,825
Other products (pounds),	14,557,121
Printing, dyeing, bleaching, and mercerizing cloth and yarn in cotton mills:	
Number of printing machines,	75
Cloth printed (square yards),	242,057,565
Additional value given by printing,	$4,175,287
Cloth dyed (square yards),	41,040,589
Yarn dyed (pounds),	* 41,590,782
Additional value given by dyeing,	$1,551,298
Cloth bleached (square yards),	† 78,693,381
Additional value given by bleaching,	$286,788
Yarn mercerized (pounds),	1,340,254
Additional value given by mercerizing,	$208,574
Miscellaneous expenses,	$7,243,357
Rent of works,	$13,714
Taxes,	$1,654,300
Interest, insurance, etc.,	$5,391,813
Contract work,	$183,530
Number of salaried persons,	1,080
Total salaries,	$2,013,902
Persons employed:	
Average number,	92,085
Males (16 years and over),	45,105
Females (16 years and over),	41,057
Children (under 16 years),	5,923
Smallest number,	82,991
Greatest number,	99,001
Total wages paid,	$32,327,443
Males,	$18,298,457
Females,	$12,855,112
Children,	$1,173,874
Skilled operatives:	
Mule spinners,	2,377
Males,	2,245
Females,	40
Children,	92
Frame spinners,	9,287
Males,	1,918
Females,	6,259
Children,	1,110

* Does not include 45,432 dozen underwear.

† Does not include 975,000 yards cotton, 11,989 dozen underwear, and 646,931 quilts.

Cotton Goods — Concluded.

Classification.	1900
Skilled operatives — Con.	
Weavers,	31,106
Males,	14,038
Females,	16,557
Children,	511
Machinery, etc.:	
Spindles,*	7,784,687
Mule,	2,556,316
Frame,	5,228,371
Looms,	179,280
Steam engines,	667
Horse power,	210,880
Gas or gasoline engines,	3
Horse power,	206
Water wheels,	333
Horse power,	64,158
Electric motors,	63
Horse power,	5,671

* Producing spindles; not including twisting and doubling spindles.

The number of working spindles is the generally accepted measure of the capacity of cotton mills and, while imperfect, is considered more accurate than the bases of capital, persons employed, wages, stock used, or value of product. The total number of active producing cotton spindles in the textile mills of Massachusetts during the census year 1900 was 7,932,883, distributed as follows:

In cotton mills,	7,784,687
In hosiery and knit goods mills,	91,356
In worsted mills,	50,080
In woollen and carpet mills,	3,760
In cotton small wares and cordage and twine mills,	3,000

The number of active cotton spindles in 1900 in the United States was 19,472,232, distributed as follows:

New England States,	13,171,377
Middle States,	1,721,347
Southern States,	4,354,034
Western States,	225,474

Numerically there has been an increase of about 19 per cent over 1890 in the number of spindles in cotton mills in the New

England States, about one per cent in the Middle States, nearly 177 per cent in the Southern States, and 29 per cent in the Western States. "Taking account of the spinning capacity of spindles, the growth of the industry in the New England States is probably not greatly above that which is indicated by the actual number of spindles, since the mills in that part of the country were in advance of the South in installing improved spindles. On the other hand, not only has the number of spindles in the Southern States become nearly three-fold that reported in 1890, but the spindles themselves are for the most part of the latest and most efficient types."

The next table shows the number of mule and frame spindles in cotton mills for 1880, 1890, and 1900 for Massachusetts.

Years.	Mule	Frame	Total
1880,	–	–	4,236,084
1890,	2,430,719	3,393,799	5,824,518
1900,	2,556,316	5,228,371	7,784,687

From the above figures, it is evident that there has been an increase in the number of frame spindles, indicating an apparent substitution of frames for mules, but, as set forth in the Census Bulletin, this is not so much due to the removal of mules from the old mills as to a change in the class of product. "It is well known that although for most purposes in cotton manufacturing, the yarn made upon ring spindles is altogether satisfactory, there is a demand for slack-twisted yarn chiefly for knit underwear, which has heretofore been produced by the mule only. Moreover, a mechanical difficulty which has not been overcome has been experienced in employing ring spindles for spinning upon cops, where the yarn made in one mill must be transported to another part of the country for consumption in hosiery mills. It is, therefore, not probable that there will be a reduction in the number of mules in use, and there may even be an increase; but the economy in the production of yarn by ring spindles, and the fact that the machinery can be operated by labor not so highly skilled as is required for mule spinning, will doubtless cause the tendency

to install frame spindles in new spinning and weaving mills to continue." Out of every 100 spindles in use in Massachusetts, 42 were mule and 58 frame in 1890, and 33 were mule and 67 frame in 1900.

A separate classification in 1900 was made for establishments producing cotton small wares, including tape, webbing, etc., and the figures are shown in the following table:

Cotton Small Wares.

Classification.	1900	Classification.	1900
Number of establishments,	14	Miscellaneous expenses,	$31,754
Private firms,	8	Rent of works,	$5,362
Corporations,	6	Taxes,	$4,515
Amount of capital invested,	$528,258	Interest, insurance, etc.,	$21,877
Land,	$19,774		
Buildings,	$77,353	Number of salaried persons,	24
Machinery, tools, etc.,	$240,819	Total salaries,	$32,150
Cash and sundries,	$190,312		
Value of stock and materials used,	$321,007	Persons employed:	
Cotton (pounds),	100,189	Average number,	430
Cost value,	$6,718	Males (16 years and over),	140
Cotton yarn (pounds),	1,767,690	Females (16 years and over),	241
Cost value,	$255,157	Children (under 16 years),	49
Worsted yarn (pounds),	250	Smallest number,	353
Cost value,	$150	Greatest number,	519
Other yarn (pounds),	1,042		
Cost value,	$407	Total wages paid,	$151,254
Waste (pounds),	6,500	Males,	$68,636
Cost value,	$390	Females,	$74,138
Oil,	$425	Children,	$8,480
Starch,	$493		
Chemicals and dyestuffs,	$1,172	Skilled operatives:	
Fuel,	$6,690	Weavers,	142
Rent of power and heat,	$3,510	Males,	20
Mill supplies,	$18,061	Females,	122
All other materials,	$26,543		
Freight,	$1,291	Machinery, etc.:	
Value of goods made and work done,	$646,848	Looms,	302
Tape and webbing,	$215,336	Steam engines,	6
Waste for sale (pounds),	340,379	Horse power,	435
Selling value,	$4,027	Gas or gasoline engines,	1
Other products of cotton,	$345,905	Horse power,	36
All other products,	$81,580	Water wheels,	5
		Horse power,	240

In the next table we present data for Massachusetts for all of the textile industries combined.

Combined Textiles.

CLASSIFICATION.	1900
Number of establishments,	511
Amount of capital invested,	$283,786,325
Value of stock and materials used,	$120,894,172
Value of goods made and work done,	$225,001,724
Average number of persons employed,	153,732
Total wages paid,	$55,382,005

As compared with the other states of the Union, Massachusetts ranks first in the manufacture of boots and shoes, a position which it has held in each of the census years 1880, 1890, and 1900. The aggregate value of factory product for 1900 was $117,115,243, the total value for the United States being $261,028,580. The table which follows presents statistics in detail for this State:

Boots and Shoes (Factory Product).

CLASSIFICATION.	1900
Number of establishments,	640
Private firms,	554
Corporations,	86
Amount of capital invested,	$37,577,630
Land,	$674,179
Buildings,	$2,360,203
Machinery, tools, etc.,	$5,750,238
Cash and sundries,	$28,793,010
Value of stock and materials used,	$75,751,964
Sole leather (pounds),	79,038,736
Cost value,	$16,626,246
Split leather (pounds),	9,905,569
Cost value,	$1,865,953
Calf and kip skins (pounds),	5,110,293
Cost value,	$3,628,419
Grain and other side leather (square feet),	60,717,718
Cost value,	$7,294,397
Goatskins (square feet),	99,846,695
Cost value,	$14,500,991
All other upper leather (square feet),	47,344,310
Cost value,	$7,273,400
Sheep and leather linings and trimmings,	$3,372,122
Cut soles, heels, etc.,	$8,876,400
Findings,	$5,578,443
Fuel,	$264,902

Boots and Shoes (Factory Product) — Continued.

CLASSIFICATION.	1900
Value of stock and materials used — Con.	
Rent of power and heat,	$155,155
Mill supplies,	$85,959
All other materials,	$5,764,500
Freight,	$465,077
Value of goods made and work done,	$117,115,243
Men's boots and shoes (pairs),	40,004,809
Selling value,	$59,628,707
Boys' and youths' boots and shoes (pairs),	10,665,620
Selling value,	$9,975,116
Women's boots and shoes (pairs),	24,500,767
Selling value,	$28,034,460
Misses' and children's boots and shoes (pairs),	14,509,745
Selling value,	$9,170,140
Men's, boys', and youths' slippers (pairs),	3,282,260
Selling value,	$2,057,672
Women's, misses', and children's slippers, oxfords, and low cuts (pairs),	8,769,854
Selling value,	$6,881,058
All other kinds (pairs),	999,490
Selling value,	$360,086
All other products,	$186,386
Amount received for custom or contract work done,	$821,618
Miscellaneous expenses,	$4,826,896
Rent of works,	$399,893
Taxes (not internal revenue),	$192,577
Interest, insurance, etc.,	$3,252,789
Contract work,	$981,637
Number of salaried persons,	2,546
Salaries paid,	$2,487,013
Persons employed:	
Average number,	58,645
Males (16 years and over),	39,022
Females (16 years and over),	18,636
Children (under 16 years),	987
Smallest number,	45,579
Greatest number,	72,261
Total wages paid,	$27,745,820
Males,	$20,873,248
Females,	$6,686,138
Children,	$186,434
Employés by classes:	
Cutters,	8,586
Stitchers,	16,352
Lasters,	8,147
Bottomers,	10,907
Edgemakers,	2,705
Finishers,	6,750

Boots and Shoes (Factory Product) — Concluded.

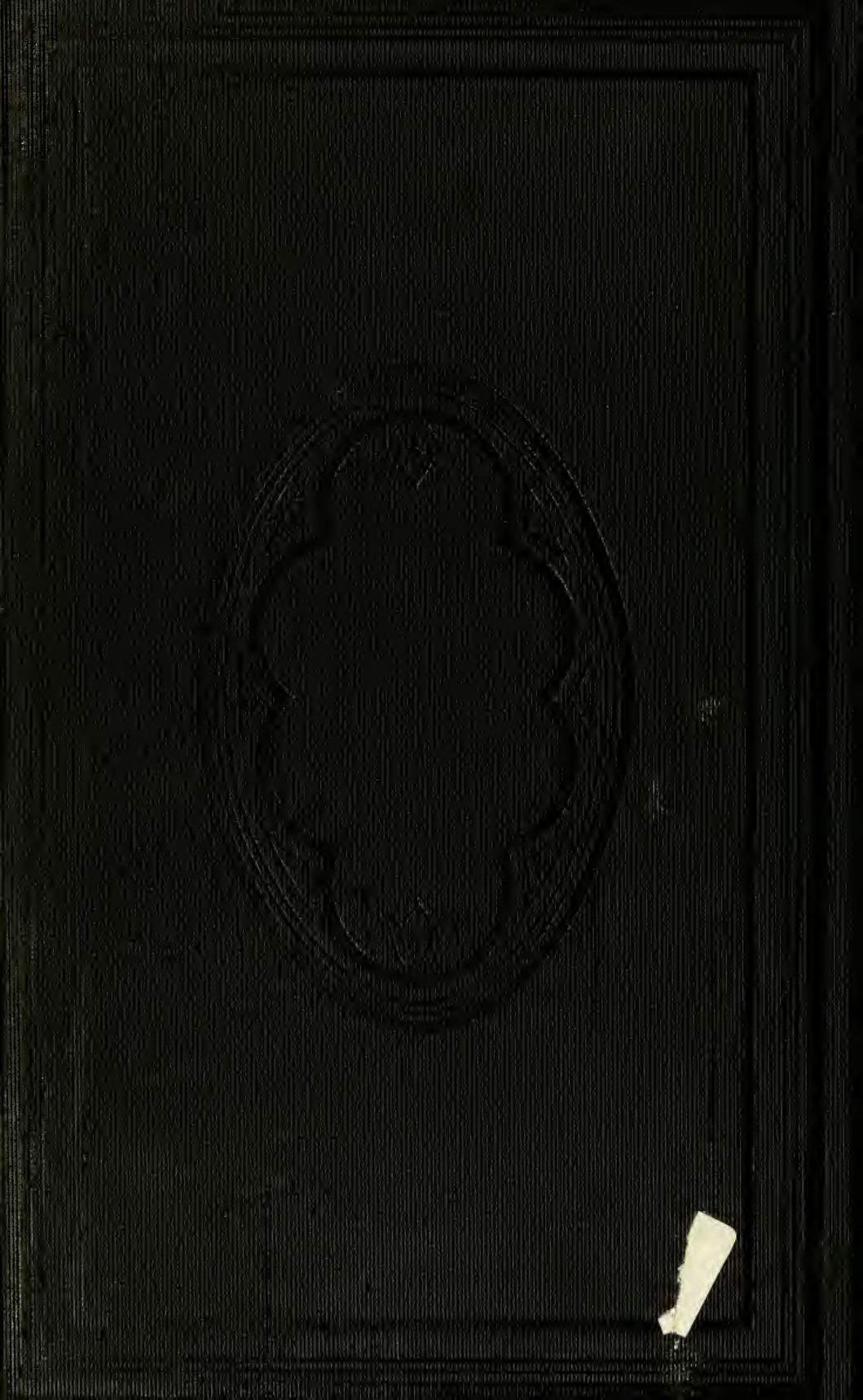
CLASSIFICATION.	1900
Maximum daily capacity of factories (pairs),	690,864
Total floor space in factories (square feet),	10,118,725
Steam engines,	232
Horse power,	13,250
Gas or gasoline engines,	7
Horse power,	32
Water wheels,	3
Horse power,	130
Electric motors,	8
Horse power,	263
Other horse power,	55

In the following table, we have reproduced from Census Bulletin No. 171 the data for Massachusetts relating to the manufacture of rubber boots and shoes:

Boots and Shoes (Rubber).

CLASSIFICATION.	1900	CLASSIFICATION.	1900
Number of establishments,	6	Value of goods made and work done — Con.	
Amount of capital invested,	$13,157,321	Boots and shoes (rubber) – Con.	
Land,	$377,473	Women's,	$3,042,142
Buildings,	$1,082,003	Boots,	$219,680
Machinery, tools, etc.,	$898,462	Shoes,	$2,231,765
Cash and sundries,	$10,799,383	Tennis shoes,	$129,357
Value of stock and materials used,	$8,837,688	Arctic overs,	$461,340
Principal materials,	$8,645,683	Children's,	$1,535,641
Raw,	$5,741,653	Boots,	$906,406
Partly manufactured,	$2,904,030	Shoes,	$342,197
Fuel,	$85,206	Tennis shoes,	$123,541
Mill supplies,	$76,938	Arctic overs,	$135,437
Freight,	$29,861	Lumbermen's overs,	$28,060
Value of goods made and work done,	$16,490,015	All other products,	$716,462
Boots and shoes (rubber),	$15,773,553	Pairs of rubber boots and shoes made,	19,750,961
Men's,	$11,195,770	Men's,	9,287,815
Boots,	$6,465,974	Boots,	2,082,541
Shoes,	$1,674,087	Shoes,	3,751,082
Tennis shoes,	$336,277	Tennis shoes,	623,426
Arctic overs,	$1,602,013	Arctic overs,	1,690,052
Lumbermen's overs,	$1,031,158	Lumbermen's overs,	996,962
Felt boots,	$86,261	Felt boots,	143,752

Boots and Shoes (Rubber) — Concluded.

Classification.	1900
Pairs of rubber boots and shoes made — Con.	
Women's,	8,105,873
Boots,	159,174
Shoes,	7,102,051
Tennis shoes,	220,807
Arctic overs,	623,841
Children's,	2,357,273
Boots,	444,889
Shoes,	1,433,434
Tennis shoes,	206,726
Arctic overs,	224,296
Lumbermen's overs,	47,928
Miscellaneous expenses,	$1,081,132
Taxes (not internal revenue),	$127,566
Sundries,	$953,566
Number of salaried persons,	153
Total salaries paid,	$220,321

Classification.	1900
Persons employed:	
Average number,	5,250
Males (16 years and over),	2,921
Females (16 years and over),	2,272
Children (under 16 years),	57
Greatest number,	6,913
Smallest number,	3,335
Total wages paid,	$2,456,305
Males,	$1,672,136
Females,	$774,152
Children,	$10,017
Machinery:	
Steam engines,	27
Horse power,	8,190
Water wheels,	4
Horse power,	175
Other engines,	1
Horse power,	50